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HOOKER'S

ICONES PLANTARUM;

OR,

FIGURES, WITH DESCRIPTIVE CHARACTERS AND REMARKS, OF NEW AND RARE PLANTS,

SELECTED FROM THE

KEW HERBARIUM.

FOURTH SERIES.

EDITED FOR THE BENTHAM TRUSTEES BY

DANIEL OLIVER, F.R.S., F.L.S.

EMERITUS PROFESSOR OF BOTANY IN UNIVERSITY COLLEGE, LONDON: LATE KEEPER OF THE HERBARIUM AND LIBRARY, ROYAL BOTANIC GARDENS, KEW.

Under the Authority of the Director of the Royal Botanic Gardens, Kew.

VOL. I.

OR VOL. XXI. OF THE ENTIRE WORK.

This and the next Volume (II.) are devoted to Indian Orchideæ.

Volume III. is in progress at the same time.

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PART II. 2026–2050, December 1890.
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D.C.L. OXON., LL.D. CANTAB., DUBLIN, EDIN., AND GLOTT., CORRESP. MEMB. INST. FRANCE:
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1890.

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M.S. del et lith.

Microstylis Scottii, Hk. f.

Plate 2001.

MICROSTYLIS SCOTTII, *Hook. f.*

Orchideæ. Subtribe Malaxeæ.

M. (Crepidium) Scottii, *Hook. f. Fl. Brit. Ind.* v. 687; foliis 2–5 sessilibus oblique cordato-ovatis acuminatis crenatis atro-fuscis margine lato pallido punctato, scapo gracili rubro, racemo elongato multifloro, bracteis lanceolatis reflexis, sepalis lateralibus late oblongis dorsali lineari dimidio brevioribus, petalis linearibus, labello rhombeo-rotundato integerrimo, apice breviter constricto 2-fido, auriculis erectis obtusis.

Hab. Pegu; at Rangoon, *J. Scott.*

Folia conferta, 3–5 poll. longa, falcata, e basi cordato-2-loba 5–7-nervia, amplexicaulia v. brevissime petiolata. *Scapus* una cum racemo 6–10-pollicaris. *Flores* brevissime pedicellati. *Labellum* $\frac{1}{4}$ poll. latum.

A singular and very beautiful species, remarkable for the lustrous though dark centre of the very oblique leaves, and their very broad dotted cream-coloured crenate margins. The plate is copied from a fine coloured drawing belonging to the Calcutta Botanical Gardens, kindly lent by Dr. King. I have seen no specimen. It is named in memory of the late Mr. John Scott, formerly curator of the Calcutta gardens, and author of a valuable paper on the 'Tree Ferns of Sikkim' (Trans. Linn Soc. xxx. i.).—J. D. H.

Fig. 1. Back view of flower 2. Front view. 3, 4, and 5. Anther and pollinia. 6. Pollinia. *All enlarged*

M. S. del, et lth.

Microstylis polyodon, Hk.f.

Plate 2002.

MICROSTYLIS POLYODON, *Hook. f.*

Orchideæ. Subtribe Malaxeæ.

M. (Crepidium) polyodon, *Hook. f. Fl. Brit. Ind.* v. 688; foliis ad 5 elliptico-ovatis acutis, scapo valido nudo, racemo elongato multifloro, sepalis consimilibus ovato-oblongis, petalis anguste linearibus, labello obovato-oblongo v. subquadrato pectinatim dentato, auriculis erectis v. divergentibus obtusis.—M. Rheedii, *Reichb. f. in Trans. Linn. Soc.* xxx. 138 (*non aliorum*).

Hab. Tenasserim, near Moulmein, *Parish.*

Caulis 2–3-pollicaris, robustus, vaginatus. *Folia* 3–5-pollicaria, sessilia v. subpetiolata, suberecta, acuta v. acuminata, nervis parallelis. *Scapus* 4-pollicaris; racemus 6-pollicaris, sublaxiflorus, bracteis parvis reflexis, pedicellis una cum ovario $\frac{1}{3}$ poll. longis gracilibus. *Flores* flavi, $\frac{1}{3}$ poll. lati; sepala obtusa, 3-nervia; petala sepalis æquilonga, obtusa, 1-nervia; labellum forma varium, sæpius oblongo-rotundatum, nunc infra medium dilatatum multidentatum auriculis incurvis, nunc angustius paucidentatum auriculis divergentibus, disco varie calloso; columna crassa, brachiis latis obtusis.

Closely allied to *M. plantaginea*, Steudel, and referred to it as a synonym (*M. Rheedii*, Lindl., non Wight) by Reichenbach. From *M. plantaginea* it differs in the small bracts, pale yellow flowers, and in the auricles of the lip not being longer than the blade. The original *M. Rheedii* of Lindley (*Malaxis Rheedii*, Swartz) was founded on a Malayan species of the section *Crepidium*, supposed to be identical with a plant figured by Rheede (Hort. Mal. xii. t. 27), but really quite different, the latter not even being a *Crepidium*. Wight was the first to identify Rheede's plant, and to describe and figure it under the name of *M. Rheedii*. A figure of it is given on Plate 1832 of this work. —J. D. H.

Figs. 1, 2, 3. Varieties of lip. 4. Column and anther. *All enlarged.*

M.S. del, et lith.

Oberonia Mannii, Hk.f.

Plate 2003.

OBERONIA MANNII, *Hook. f.*

Orchideæ. Subtribe Malaxeæ.

O. Mannii, *Hook. f.* (*sp. nov.*) ; caule elongato, foliis anguste linearibus ensiformibus subacutis recurvis, scapo brevissimo, spica gracili, bracteis ovatis, floribus minimis subsessilibus, petalis ovato-oblongis obscure erosis, labello sepalis quadrato-oblongo longiore 3-lobo, lobis lateralibus brevibus subulato-lanceolatis divergentibus, intermedio apice late bifido lobulo minuto sinu interposito, segmentis subulatis divergentibus v. parallelis.

Hab. Jyntea hills, above Silhet; alt. 3,500 ft., *G. Mann.*

Caules 3–4 poll. longi. *Folia* alterna, pollicaria, basi $\frac{1}{8}$ poll. lata. *Spica* 2-pollicaris, gracillima, erecta. *Flores* minimi, ad $\frac{1}{36}$ poll. lati, fasciculati, virides ; bracteæ ovario æquilongæ ; sepala ovato-rotundata, obtusa ; petala obtusa, enervia ; labelli lobis lateralibus intermedio latiusculo multo minoribus decurvis ; segmentorum terminalium 2 lateralibus brevibus v. elongatis. *Capsula* brevissime pedicellata, vix $\frac{1}{12}$ poll. longa.

In habit this closely resembles *O. angustifolia*, which differs in the more obtuse leaves, shorter spikes, and obcordate mid-lobe of the lip, the side lobes of which are linear—oblong, and obtuse. In the form of the lip it more resembles *O. caulescens*, in which the leaves are longer, straighter, acuminate, the flowers pedicelled, and the lip has no side lobes. *O. Mannii* belongs to the subdivision of the genus with broad petals and a three-lobed lip, and may be placed next to *O. recurva* in 'The Flora of British India.' *O. angustifolia*, which in 'The Flora of British India' is placed in the section with narrow petals, has these sometimes so broad that it might as well be placed in the broad-petalled section with *O. Mannii*.—J. D. H.

Fig. 1. Bracts. 2 and 5. Flowers. 3. Lip. 4. Petal. *All enlarged.*

M. S. del, et lith.

Oberonia insectifera, Hk.f.

Plate 2004.

OBERONIA INSECTIFERA, *Hook. f.*

Orchideæ. Subtribe Malaxeæ.

O. insectifera, *Hook. f.* (*sp. nov.*) ; caule brevissimo, foliis ensiformibus acuminatis rectis a basi sensim ad apicem angustatis, scapo brevi, spica folia subæquante rachique gracili, bracteis subulatis, floribus sessilibus, sepalis ovatis subacutis petalisque oblongo-lanceolatis reflexis, labello sepalis multo longiore, lobis lateralibus ad basin 2–3-partitis segmentis subulatis, lobo medio bicaudato.

Hab. Malay Peninsula; Perak, at Larut, *King's Collector.*

Folia 2–4 poll. longa, basi $\frac{1}{3}$ poll. lata, coriacea, brevissime vaginantia. *Scapus* bracteis vacuis vaginatus ; spica 3–4-pollicaris, gracilis, bracteis floribus brevioribus caducis. *Flores* $\frac{1}{20}$ poll. longi ; sepala hyalina, obscure 3-nervia ; petala 1-nervia ; labellum papillosum, insectum hexapodum bicaudatum referens ; segmentis obscure crenulatis, lobo terminali forma varia, limbo interdum basi constricto, segmentis rectis v. recurvis limbo longioribus v. brevioribus. *Capsula* breviter pedicellata, ellipsoidea.

In flower this species closely resembles *O. Griffithiana*, but it differs totally in habit, in being acaulescent, and in the coriaceous leaves narrowed from the base to the apex.—J. D. H.

Fig. 1. Bract. 2. Flower. 3 and 4. Different forms of lip. *All enlarged.*

W.S. ie. et lith.

Oberonia rosea, Hk.f.

Plate 2005.

OBERONIA ROSEA, *Hook. f.*

Orchideæ. Subtribe Malaxeæ.

O. rosea, *Hook. f.* (*sp. nov.*); caulescens, foliis lineari-ensiformibus acuminatis, marginibus vaginarum undulatis, scapo brevissimo, spica folia æquante gracili, bracteis ovato- v. subulato-lanceolatis, floribus sessilibus minimis, sepalis late ovatis obtusis, petalis ellipticis erosis, labello sepalis æquilongo 3-lobo, lobis cuneato-quadratis, lateralibus erosis integerrimisve terminali retuso integerrimo minoribus.

Hab. Malay Peninsula, *Sir W. Norris.* Perak, Gunong Batu Pateh, alt. 3–4,000 ft., *Wray, King's Collector.*

Caules 1–2-pollicares, subflexuosi. *Folia* alterna, 2–3½ poll. longa, basi ⅙–⅓ poll. lata, erecto-incurva, a basi ad apicem sensim angustata, vaginis ½–1 poll. longis. *Scapus* gracilis; bracteæ flores subsuperantes. *Flores* ad $\frac{1}{30}$ poll. diam., rosei; sepala lata, concava, enervia; petala fere æquilonga, enervia. *Capsula* subsessilis, ellipsoidea.

This species belongs to the subsection of the genus with broad petals and a three-lobed lip, and should be placed near *O. recurva,* Lindl.—J. D. H.

Figs. 1 and 2. Bracts. 3. Flower. 4. Lip. *All enlarged.*

Plate 2006.

LIPARIS THWAITESII, *Hook. f.*

Orchideæ. Subtribe Liparieæ.

L. (**Mollifoliæ**) **Thwaitesii**, *Hook. f. Fl. Brit. Ind.* v. 693; caule subpseudobulboso unifoliato, folio late ovato v. ovato-cordato acuminato 5–7-nervi, scapo subrobusto, racemo laxifloro, bracteis lanceolatis suberectis pedicellis gracilibus brevioribus, sepalis lateralibus labello suppositis ovato-lanceolatis acutis 3-nerviis, dorsali lineari, petalis anguste linearibus, labello sepalis paullo longiore late obovato v. cuneato-oblongo apice rotundato v. retuso, basi 2-dentato, columna gracili apice incurva 2-dentata. L. Wightiana *ex part. Thwaites, Enum.* 294. *Ridley in Journ. Linn. Soc.* xxii. 278.

Hab. Ceylon, in the Central Province, alt. 3–5,000 ft.; *Thwaites* (C. P. 3179).

Pseudobulbi conferti, anguste ovoidei, vaginati, in caulem brevem laxe vaginatum producti. *Folium* 2–3 poll. longum, sessile v. petiolatum, membranaceum, plicatum, margine undulato-crenulatum. *Scapus* una cum racemo folio subduplo longior, laxiflorus; bracteæ $\frac{1}{3}$ poll. longæ, inferiores remotæ vacuæ. *Flores* suberecti, $\frac{3}{4}$ poll. longi, pedicellis una cum ovario $\frac{1}{2}$-pollicaribus, erecto-patentibus; sepalum dorsale reflexum; labellum rubro-purpureum, rectum, planum, disco 5-nervi, nervis lateralibus marginem versus ramosis.

Included by Thwaites and Ridley under *L. Wightiana*, a small, delicate, two-leaved species, with much smaller flowers, an orbicular-oblong lip and sigmoidly incurved column.—J. D. H.

Fig. 1. Flower. 2. Lateral sepal. 3. Petal. 4. Lip. 5. Top of column. *All enlarged.*

M. S. del, et lith

Liparis acuminata, Hk. f.

PLATE 2007.

LIPARIS ACUMINATA, *Hook. f.*

ORCHIDEÆ. Subtribe LIPARIEÆ.

L. (**Mollifoliæ**) **acuminata**, *Hook. f. Fl. Brit. Ind.* v. 696 ; caule elongato folioso, foliis late vaginantibus lanceolatis acuminatis 7-nerviis, scapo gracili, racemo elongato laxifloro, bracteis minutis ovatis suberectis, floribus majusculis, sepalis lateralibus falcatis oblongo-lanceolatis acutis 5-nerviis, dorsali lineari, petalis anguste linearibus, labello amplo subrecurvo transverse oblongo v. suborbiculari crenulato apice rotundato v. in acumen producto, basi 2-spinuloso v. 2-tuberculato, columna gracili incurva superne anguste alata.

HAB. Khasia Mts., *Griffith.*

Caulis 3–5-pollicaris, robustus, basi non aut vix incrassatus. *Folia* 5–6, suberecta, 4–5 poll. longa, tenuiter membranacea. *Scapus* 4–6-pollicaris ; bracteæ $\frac{1}{10}$ poll. longæ ; pedicelli $\frac{1}{2}$–$\frac{3}{4}$ poll. longi, graciles. *Flores* $\frac{3}{4}$ poll. lati ; sepala lateralia labello fere supposita eique fere æquilonga ; labellum 5-nerve, nervis lateralibus marginem versus ramosis ; columnæ margines in alas angustas sensim dilatati.

The nearest ally is the common Himalayan *L. bituberculata*, which has a cuneately obovate entire lip shorter than the sepals.—J. D. H.

Fig. 1. Flowers. 2. Dorsal sepal. 3. Petal. 4. A variety of the lip. *All enlarged.*

M. & del. et lith.

Liparis deflexa, Hk.f.

PLATE 2008.

LIPARIS DEFLEXA, *Hook. f.*

ORCHIDEÆ. Subtribe LIPARIEÆ.

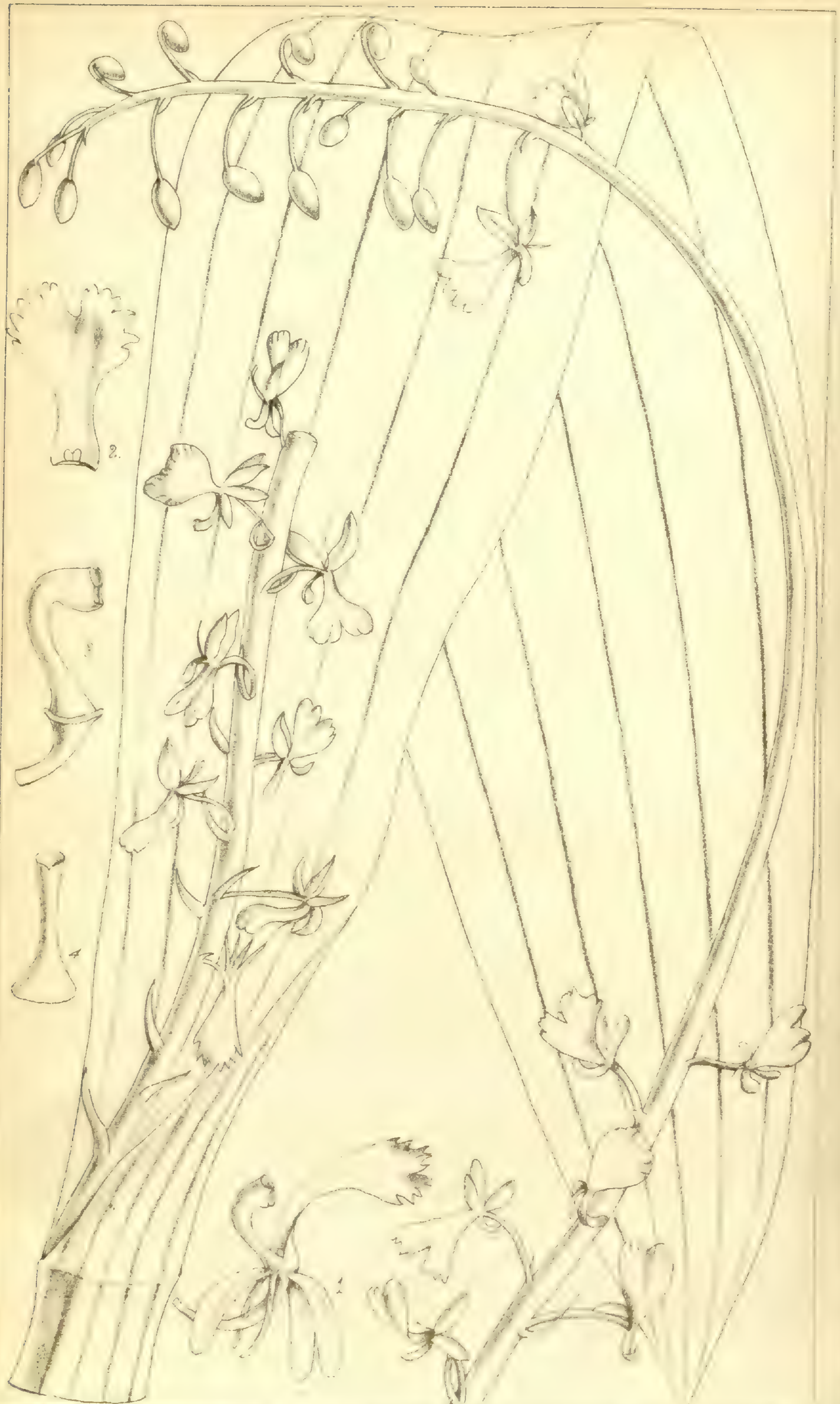
L. (**Mollifoliæ**) **deflexa**, *Hook. f. Fl. Brit. Ind.* v. 697; caule brevi 2-foliato, foliis oppositis subsessilibus ovato-lanceolatis acuminatis, scapo gracili elato, bracteis lanceolatis deflexis, sepalis lateralibus subfalcatis oblongo-lanceolatis 3–5-nerviis, dorsali lineari-oblongo, labello flabelliformi orbiculari v. subobcordato crenulato, basi nudo v. obscure calloso, columna brevi compressa subclavata apice truncata exalata.

HAB. Sikkim Himalaya; *Griffith's Collectors.*

Caulis brevis, basi subpseudobulbosus, bracteis vacuis paucis. *Folia* 4–8 poll. longa, tenuiter membranacea, 5–7-nervia. *Scapus* una cum racemo laxifloro 6–8 poll. longus; bracteæ angustæ, pedicellis gracilibus breviores. *Flores* $\frac{1}{2}$ poll. lati, suberecti; sepala omnia 5-nervia; labellum basi constrictum, disco 3–5-nervi, nervis lateralibus marginem versus ramosis. *Capsula* $\frac{1}{2}$-pollicaris, fusiformis.

Nearly allied to the common Indian and Malayan *L. paradoxa*, Reichb., which has a stout angular scape, broader never deflexed bracts; and more fleshy flowers with a 2-tubercled lip and a very different column and capsule. The specimens are very few.—J. D H.

Fig. 1. Flower. 2 and 3. Lip of different forms. 4. Petal. *All enlarged.*



M S del et Lith

Liparis Scortechini, Hk.f.

PLATE 2009.

LIPARIS SCORTECHINI.

ORCHIDEÆ. Subtribe LIPARIEÆ.

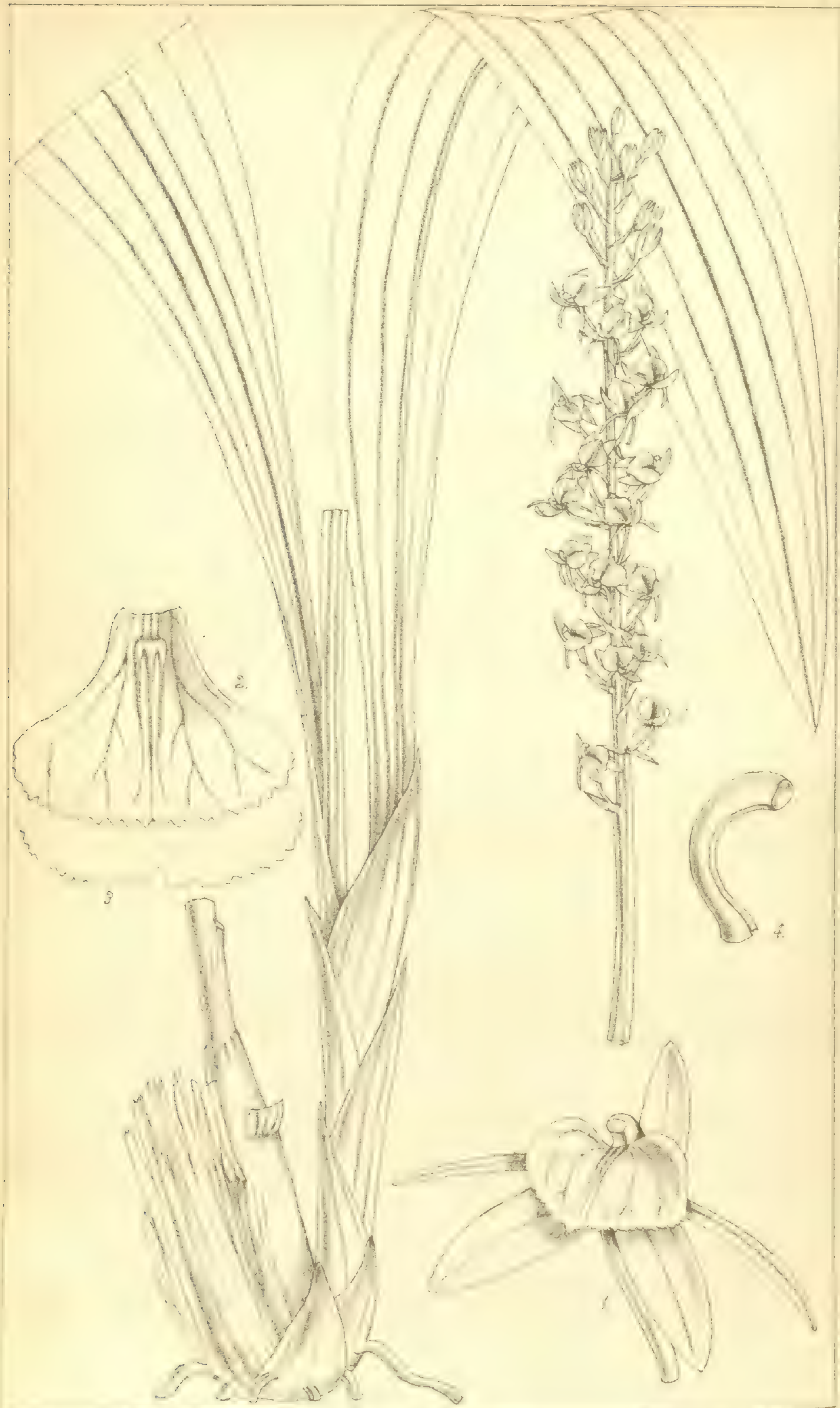
L. (**Coriifoliæ**) **Scortechini**, *Hook. f. Fl. Brit. Ind.* v. 703; pseudobulbo elongato robusto subcylindrico unifoliato, folio sessili magno lineari-oblongo acuto 5-nervi, scapo crasso brevissimo, racemo folio æquilongo laxifloro, bracteis lanceolatis caducis pedicellis gracilibus brevioribus, sepalis brevibus recurvis lineari-oblongis obtusis, labello sepalis duplo longiore fere recto e basi angusta anguste cuneato v. flabellato apice lacero basi minute 2-tuberculato.

HAB. Malay Peninsula; Perak, *Father Scortechini.*

Pseudobulbus 4½ poll. longus, 1 poll. latus; siccitate leviter sulcatus. *Folium* 14 poll. longum, 2½ poll. latum, subcoriaceum. *Racemi* rachis teres; bracteæ ¼ poll. longæ; pedicelli ½–¾ poll. longi. *Labellum* ½ poll. longum.

I have ventured to name and describe this remarkable plant from a drawing made by Father Scortechini, in the possession of the Government of Perak. Rude as the drawing is, it suffices to show that the species is the most gigantic of the genus, and quite distinct from any other, except *L. robusta* (Plate 2012), though obviously allied to *L. latifolia*, Blume, of Java. This species is inadvertently misplaced in 'The Flora of British India;' it should be in the unifoliate subsection near *L. pachypus* (p. 700).—J. D. H.

Fig. 1. Flower. 2. Lip. 3. Column. 4. ? *All enlarged, and from Father Scortechini's drawing.*



M. Sduetsh.

Liparis Dolabella, Hk. f.

PLATE 2010.

LIPARIS DOLABELLA, *Hook. f.*

ORCHIDEÆ. Subtribe LIPARIEÆ.

L. (**Coriifoliæ**) **Dolabella**, *Hook. f.* (*sp. nov.*) ; pseudobulbis angustis 2-foliatis, foliis lineari-lanceolatis oblanceolatisve 5–7-nerviis, scapo anguste alato, racemo laxifloro, floribus inter minoribus, bracteis pedicellos breves subæquantibus, sepalis rectis oblongo-lanceolatis 1-nerviis, marginibus non revolutis, labello dolabriformi recurvo margine antico crenato, nervis medianis 3 incrassatis basi callosis, lateralibus utrinque 2 margines versus ramosis, columna exalata.

HAB. Khasia Hills, alt. 4,000 ft., *Mann*.

Pseudobulbi 1–2-pollicares, teretiusculi, vaginati, vaginis elongatis acutis. *Folia* 6–14 poll. longa, $\frac{3}{4}$–1 poll. lata, basi angustata, subpetiolata. *Scapus* nudus, una cum racemo foliis æquilongus; bracteæ $\frac{1}{4}$ poll. longæ, lanceolatæ. *Flores* $\frac{1}{3}$ poll. diam.; sepala subæqualia; petala anguste linearia; labellum sepalis brevius, latius quam longum, explanatum; columna gracilis, incurva, exalata.

The nearest ally of this is probably *L. distans*, Clarke (*L. macrantha*, nob. plate 1854), which has a terete scape, flowers upwards of an inch in diameter, and a spathulately obovate lip. In its narrowly winged scape it resembles *L. bootanensis*, Griff., and *lancifolia*, nob. (plate 1855), both of which are normally 1-leaved, and differ from *L. Dolabella* in having hooked wings on the column.—J. D. H.

Fig. 1. Flower. 2. Lip. 3. Anterior margin of another lip. 4. Column. *All enlarged.*

M. S. del. et lith.

Liparis gracilis, Hk. f.

PLATE 2011.

LIPARIS GRACILIS, *Hook. f.*

ORCHIDEÆ. Subtribe LIPARIEÆ.

L. (Coriifoliæ) gracilis, *Hook. f.* (*sp. nov.*); pseudobulbo parvo vaginis elongatis multo breviore 2-foliato, foliis oblanceolatis acutis basi angustatis 5-nerviis, scapo elongato nudo una cum racemo gracillimo elongato laxifloro foliis multoties longiore, bracteis subulatis pedicellos breves subæquantibus, sepalis lineari-oblongis obtusis revolutis 3-nerviis marginibus non recurvis, petalis linearibus, labello infra medium reflexo cuneato-obovato apice truncato subbifido dentato basi ecalloso.

HAB. Malay Peninsula; Perak, on Waterfall Hill, *Wray*.

Pseudobulbus pollicaris, compressus, vaginis elongatis foliaceis tectus. *Folia* 3–7 poll. longa, membranacea. *Scapus* una cum racemo 12–16-pollicaris, teres, fere nudus. *Flores* sparsi, $\frac{1}{3}$ poll. diam., pallide virides; bracteæ $\frac{1}{8}$ poll. longæ; labellum sepalis brevius, rubrum, marginibus infra medium incrassatis, nervis obscuris. *Columna* incurva, brevis, apicem versus anguste alata.

L. gracilis belongs to the 2-leaved division of the *Coriifoliæ* section with 3-nerved sepals, and is nearest to the Malayan *L. flaccida*, Reichb. f., also a Perak species, which differs in the very small flowers, decurved pedicels, and ciliate lip.—J. D. H.

Fig. 1. Flower. 2. Lateral; and 3, dorsal sepals. 4. Petal. 5. Lip. *All enlarged.*

M S del. et lith

Liparis robusta, Hk. f.

PLATE 2012.

LIPARIS ROBUSTA, *Hook. f.*

ORCHIDEÆ. Subtribe LIPARIEÆ.

L. (**Coriifoliæ**) **robusta**, *Hook. f.* (*sp. nov.*); pseudobulbo crasso lineari- v. columnari unifoliato, folio sessili elliptico-lanceolato obtusinsculo multinervi, scapo robusto erecto bracteis numerosis vacuis erecto-patentibus instructo, racemo breviusculo laxifloro, bracteis lanceolatis pedicellis gracilibus brevioribus, sepalis lineari-oblongis obtusis 3-nerviis deflexis v. revolutis marginibus non revolutis, petalis linearibus, labello sepalis longiore recurvo e basi augusta 2-callosa flabelliformi profunde bifido nervoso, lobis crenato-dentatis ciliolatisque.

HAB. Malay Peninsula; Perak, on Maxwell Hill, *Wray*.

Pseudobulbus 2–3-pollicaris, $\frac{2}{3}$ poll. latus, ut videtur compressus. *Folium* coriaceum 10 poll. longum, $2\frac{1}{2}$ poll. latum. *Scapus* una cum racemo 6-pollicaris; bracteæ floriferæ $\frac{1}{3}$ poll. longæ. *Flores* $\frac{3}{4}$ poll. diam.; sepala et petala ochracea v. fulva; labellum rufescens, basi erectum angustum dein recurvum et dilatatum lateribus deflexis, nervis perplurimis creberrimis striatum, callis ovoideis majusculis tumidis contiguis; columna crassiuscula, superne subalata.

This species having a solitary leaf and 3-nerved sepals and a long lip must be placed near *L. pachypus*, Par. and Reichb. f., and *L. Griffithii*, Ridley, both of which have 5-nerved lips. It is possible that it may prove to be a small form of *L. Scortechini*, and both of *L. latifolia*, Blume.—J. D. H.

Fig. 1. Flower. 2. Lip. *Both enlarged.*

Liparis tenuifolia, Hk f

Plate 2013.

LIPARIS TENUIFOLIA, *Hook. f.*

Orchideæ. Subtribe Liparieæ.

L. (Coriifoliæ) tenuifolia, *Hook. f.* (*sp. nov.*); pseudobulbis parvis ampulliformibus unifoliatis, folio anguste lineari-oblanceolato acuto in petiolum sulcatum angustato, scapo gracili tereti nudo, racemo multifloro, floribus parvulis, bracteis subulatis, sepalis deflexis linearioblongis rectis 1-nerviis, labello sepalis breviore suberecto 3-lobo basi ecalloso, lobis lateralibus incurvis acutis, intermedio rhombeo-rotundato deflexo.

Hab. Upper Assam; on the Mikir Hills, alt. 1,000 ft., *Mann.*

Pseudobulbi $\frac{1}{2}$–$\frac{3}{4}$-pollicares, teretes, rhizomate gracili seriatim sessiles, demum vaginis deciduis nudi. *Folium* 6–8 poll. longum, $\frac{1}{4}$–$\frac{1}{3}$ poll. latum, 1-nerve, tenuiter coriaceum. *Scapus* una cum racemo folium subæquans; bracteæ $\frac{1}{8}$ poll. longæ, pedicellos subæquantes. *Flores* $\frac{1}{6}$ poll. diam., flavi; labellum ambitu fere orbiculare, hypochilo lunato, epichili crassiusculi convexi punctati angulis rotundatis v. subacutis; columna gracilis, exalata.

Very distinct from any described species; allied to *L. Mannii*, Reichb. f., also an Assam species, of which I have seen no specimens, and which is described as having a two-edged scape, lower bracts longer than the pedicels, and a crenulate mid-lobe of the lip.—J. D. H.

Fig. 1. Flower. 2. Lateral; and 3, dorsal sepals. 4, 5, and 6. Various forms of lip. *All enlarged.*

M.S. del. et lith.

Liparis torta, Hk.f.

PLATE 2014.

LIPARIS TORTA, *Hook. f.*

ORCHIDEÆ. Tribe LIPARIEÆ.

L. (Coriifoliæ) torta, *Hook. f.* (*sp. nov.*); pseudobulbis parvis 1-foliatis, folio sessili elliptico-lanceolato acuto 9-nervi, scapo una cum racemo folio æquilongo laxifloro, floribus majusculis, bracteis lanceolatis pedicellis elongatis decurvis dimidio brevioribus, sepalis linearioblongis obtusis 1-nerviis revolutis marginibus recurvis, labello sepalis breviore cuneato-obovato angulis rotundatis, basi callo 2-lobo instructo, apice obscure crenato.

HAB. Khasia Hills, alt. 3,000 ft.; *Mann.*

Pseudobulbi $\frac{3}{4}$ poll. longi, conico-ovoidei. *Folium* tenuiter coriaceum, 4–5 poll. longum, $1\frac{1}{4}$–$\frac{1}{2}$ poll. latum. *Scapus* robustus, superne bracteis paucis vacuis instructus, rarius flexuosus, bracteis floriferis $\frac{1}{4}$–$\frac{1}{3}$ poll. longis membranaceis erecto-patentibus; pedicelli cum ovario $\frac{2}{3}$ poll. longi; sepala $\frac{1}{2}$ poll. longa; labellum $\frac{1}{3}$ poll. latum.

Very distinct from any described species; perhaps nearest to *L. bootanensis*, which differs in the 3-nerved straight sepals, slender scape, and the hooked wings of the column.—J. D. H.

Fig. 1. Flower. 2. Dorsal sepal, spread out. 3. Lip. *All enlarged.*

M.S.del. et lith.

Platyclinis Kingii, Hk.f.

Plate 2015.

PLATYCLINIS KINGII, *Hook. f.*

Orchideæ. Subtribe Liparieæ.

P. Kingii, *Hook. f. Fl. Brit. Ind.* v. 708; foliis lineari-lanceolatis subacutis acuminatisve, scapo gracillimo, racemo decurvo laxifloro, bracteis pedicellos superantibus acutis, sepalis lateralibus ovato-lanceolatis acuminatis petalisque conformibus 5-nerviis, labelli lobis lateralibus rotundatis crenulatis, disco ad basin lobi terminalis ovati acuti callis 2 curvis instructo, columna brevissima dorso crasse carinata alis angustis 2–3-dentatis.

Hab. Malay Peninsula; Perak, *Father Scortechini, King's Collector.*

Pseudobulbi in rhizomate rigido seriati, pollicares, ampulliformes. *Folia* 3–7 poll. longa, tenuiter coriacea, in petiolum brevem angustata, 5-nervia. *Scapus* nudus, una cum racemo folia æquans; bracteæ $\frac{1}{6}$ poll. longæ. *Flores* $\frac{1}{3}$ poll. diam., extus virides, intus flavi, labello viridi; sepalum dorsale 3-nerve; columna incurva, galea apice obtusa; anthera ellipsoidea, umbonata.

Closely allied to a Bornean species (Beccari, No. 2095) in which the column is longer, and I do not find on it the broad thick dorsal ridge which is a remarkable character of *P. Kingii*.—J. D. H.

Fig. 1. Flower. 2, 3, and 4. Column. 5. Posterior; and 6, anterior view of anther.

Platycelus gracilis, Hk f

PLATE 2016.

PLATYCLINIS GRACILIS, *Hook. f.*

ORCHIDEÆ. Subtribe LIPARIDEÆ.

P. gracilis, *Hook. f. Fl. Brit. Ind.* v. 708; foliis petiolatis elliptico-lanceolatis obtusiusculis, scapo gracillimo, racemo elongato pendulo, bracteis pedicellos superantibus acutis, sepalis petalisque conformibus ovato-lanceolatis acuminatis 3-nerviis, labelli lobis lateralibus e basi rotundato-lanceolatis acuminatis disco inter lobos crasse 3-carinato, intermedio obovato v. cuneato, columnæ brachiis elongatis ensiformibus.

HAB. Malay Peninsula; Perak, alt. 4–5,000 ft., *King's Collector*.

Pseudobulbi 1–1½-pollicares, fusiformes, teretes. *Folia* 4–6 poll. longa, 1 poll. lata, 5–7-nervia, petiolo ¼–1 poll. longo. *Scapus* una cum racemo pedalis; bracteæ ⅛–⅙ poll. longæ *Flores* ⅓ poll. diam., albo-flavi, labelli lobo terminali forma varia obtusa acuta v. cuspidata, carinis viridibus; columna elongata, dorso tereti, brachiis ascendentibus, galea subacuta; anthera subhemispherica.—J. D. H.

Fig. 1. Closed flower. 2. Ditto, expanded. 3 and 4. Varieties of lip. 5. Column. 6. Anther. *All enlarged.*

M. S. del. et lith.

Dendrobium longipes Hk. f.

Plate 2017.

DENDROBIUM LONGIPES, *Hook. f.*

Orchideæ. Subtribe Dendrobieæ.

D. (**Sarcopodium**) **longipes**, *Hook. f. Fl. Brit. Ind.* **v. 713**; foliis ellipticis oblongo-lanceolatisve, scapo valido erecto foliis longiore paucifloro, floribus longe pedicellatis, mento brevi conico apice rotundato, sepalis linear- v. oblongo-lanceolatis petalisque consimilibus 7–9-nerviis, labelli ovato-oblongi 3-lobi lobis lateralibus rotundatis subacutis v. truncatis, intermedio ovato v. lanceolato, disco inter lobos laterales tuberculis paucis elongatis 2–3-seriatis instructo.

Hab. Malay Peninsula; at Perak, *Father Scortechini, Wray*.

Rhizoma crassum, radices vermiformes emittens. *Pseudobulbi* obpyramidati, 1–1½ poll. longi, vaginati, vaginis rufo-fuscis membranaceis. *Folia* 1½–3 poll. longa, sessilia v. in petiolum brevem angustata, crasse coriacea, subtus (siccitate) nervosa, apice subacuta v. 2-fida. *Scapus* 6–8-pollicaris, teres, nudus, 3–5-florus; bracteæ parvæ, lanceolatæ; pedicellus robustus, una cum ovario 1½ poll. longus. *Flores* 1¼–1¾ poll. lati, albi, venis fusco-rubris; sepala pollicaria, subacuta, lateralia subfalcata; labellum sepalis dimidio brevius, sessile, coriaceum, tuberculis in quavis serie duobus; columna longiuscula; anthera umbonata.

This with *D. perakense*, plate 2019, and *D. macropodum*, plate 2020, belongs to the division of the section *Sarcopodium* with several flowers on the scape, of which the type is *D. geminatum*, Lindl. The arrival at Kew of a fine suite of specimens of *D. longipes* from Mr. Wray has enabled me to give here a much fuller description than that in 'The Flora of British India,' which was drawn up on Scortechini's scanty materials.—J. D. H.

Figs. 1 and 2. Sepals. 3. Petal. 4. Column and lip. 5 and 6. Lips. 7. Column seen in front. 8 and 9. Anthers. *All enlarged.*

M S del. et lith

Dendrobium Lonchophyllum, Hk. f.

PLATE 2018.

DENDROBIUM LONCHOPHYLLUM, *Hook. f.*

ORCHIDEÆ. Subtribe DENDROBIEÆ.

D. (Cadetia) lonchophyllum, *Hook. f. Fl. Brit. Ind.* v. 714; pseudobulbis elongatis anguste fusiformibus unifoliatis, folio lineari-lanceolato acuminato, floribus subsolitariis parvis breviter pedicellatis, mento elongato, sepalo dorsali ovato lateralibus triangulari-ovatis multo minore, labelli hypochilo cuneato angulis acutis disco nervoso obscure bicarinato, epichilo latiore quam longo late unguiculato dein bialato, columna brevi, anthera longe stipitata.

HAB. Malay Peninsula; Perak, *Futher Scortechini.*

Rhizoma gracile, crassitie pennæ corvinæ. *Pseudobulbi* 1–2-pollicares, teretes, sessiles. *Folia* 3–5 poll. longa, nervosa et transverse nervulosa. *Flores* ½ poll. longi et lati; sepala et petala clathratim nervosa, sepala lateralia subfalcata, basi lata, curva, columnæ pedi inserta, subacuta; petala oblongo-lanceolata, acuta; labellum sepalis æquilongum, angustum, nervosum, hypochilo epichilo longiore et paullo angustiore truncato angulis acutis, epichilo retuso; columna apice bicuspidata.

This and *D. Kunstleri* (plate 2023) belong to the section of which *D. Macræi*, Lindl., is the type. It closely resembles an unnamed Javanese species in Lindley's herbarium, and may be one of Blume's *Desmotricha*, described in the 'Bijdragen,' of which there are several referable to section *Cadetia*; but I fail to identify it with any by his wholly insufficient diagnoses.—J. D. H.

Fig. 1. Flower of the *natural size.* 2. Flowers. 3. Dorsal sepal. 4. Petal. 5. Lip. 6. Column and anther. 7. Anther. *All but Fig.* 1 *enlarged.*

Dendrobium perakense, Hk. f

Plate 2019.

DENDROBIUM PERAKENSE, *Hook. f.*

Orchideæ. Subtribe Dendrobieæ.

D. (Sarcopodum) perakense, *Hook. f. Fl. Brit. Ind.* v. 712; pseudobulbis brevibus vaginatis, foliis lanceolatis acuminatis subpetiolatis, scapo elongato erecto crebre bracteato multifloro, floribus breviter pedicellatis, mento brevi, sepalis subpuberulis anguste lanceolatis petalisque angustioribus tenuiter acuminatis nervosis, labelli lanceolati 3-lobi lobis lateralibus rotundatis intermedio ovato-lanceolato acuto, disco inter lobos laterales 3-carinato.

Hab. Malay Peninsula; Perak, *Father Scortechini.*

Rhizoma robustum, crassitie pennæ anserinæ. *Pseudobulbi* pollicares, vaginis latis acutis vestiti. *Folia* 5–9 poll. longa, nervosa. *Scapus* robustus, foliis æquilongus, bracteis vacuis $\frac{1}{4}$–$\frac{1}{3}$ poll. longis, acutis, appressis ad basin instructus; racemo plurifloro, erecto; bracteis floriferis lanceolatis. *Flores* $1\frac{1}{2}$ poll. lati, breviter pedicellati, pedicello ovario sepaloque dorsali sparsim puberulo; mento rotundato; sepala lateralia falcata petalaque 5-nervia; labellum sepalis paullo brevius; epichilo 5-nervi, hypochilo æquilongo; columna brevissima, acuminata.

The bracteate scape at once distinguishes this species from all others of the section *Sarcopodium* known to me.—J. D. H.

Fig. 1. Flower of the *natural size.* 2. Flower. 3. Sepals, petals, and column. 4. Lip. *All but Fig.* 1 *enlarged.*

M.S. del et lith.

Dendrobium macropodum. Hk f.

PLATE 2020.

DENDROBIUM MACROPODUM, *Hook. f.*

ORCHIDEÆ. Subtribe DENDROBIEÆ.

D. (Sarcopodium) macropodum, *Hook. f. Fl. Brit. Ind.* v. 713; rhizomate crasso vaginato, pseudobulbis conicis sulcatis, foliis brevibus ellipticis obtusis, scapo valido nudiusculo foliis multo longiore plurifloro, ovario elongato breviter pedicellato, mento brevissimo, sepalis anguste lanceolatis acuminatis nervosis, petalis linearibus acutis, labelli hypochilo lato angulis (lobis lateralibus) obtusis rotundatisve, disco 3-carinato carinis in epichilum orbiculare productis, columna longiuscula.

HAB. Malay Peninsula; Perak, *Father Scortechini.*

Rhizoma crassitie pennæ olorinæ, vaginis brevibus imbricatis obtusis tectum; pseudobulbi 2-pollicares, vaginati, profunde 5–6-sulcati, sinubus latis, angulis obtusis. *Folia* 2-3-pollicaria, crasse coriacea, enervia, marginibus recurvis. *Scapus* 6–8-pollicaris, strictus; bracteæ $\frac{1}{4}$ poll. longæ, ovato-lanceolatæ, pedicellis una cum ovariis 2-pollicaribus suberectis. *Flores* $1\frac{1}{2}$ poll. lati; sepala tenuiter attenuata; labellum sepalis paullo brevius, basi callis 2-auriculatum; columna valida, pede brevi.

From the great length of the ovary the flowers appear to be long-pedicelled; in this respect the species resembles *D. cymbidioides*, Lindl., of Java, which differs in having short subglobose pseudobulbs, lanceolate retuse leaves, and obtuse sepals.—J. D. H.

Fig. 1. Flower. 2. Dorsal; and 3, lateral sepal. 4. Petal. 5. Lip. 6. Column. *All enlarged.*

M.S del. et lith.

Dendrobium kentrophyllum, Hk. f.

Plate 2021.

DENDROBIUM KENTROPHYLLUM, *Hook. f.*

Orchideæ. Subtribe Dendrobieæ.

D. (Strongyle) kentrophyllum, *Hook. f. Fl. Brit. Ind.* v. 725; caulibus fasciculatis robustis rigidis, foliis distichis rectis recurvisve carnosulis subulatis teretibus acutis, floribus solitariis apicibus denudatis ramorum lateralibus, mento sepalo dorsali ovato-oblongo obtuso subduplo longiore subincurvo obtuso, sepalorum lateralium parte libera dorsali consimili, petalis oblanceolatis, labello elongato spathulato apice rotundato 2-lobo, lobis incumbentibus.

Hab. Malay Peninsula; Perak, *Father Scortechini.*

Caules 5–6-pollicares, crassitie pennæ corvinæ, teretes, internodiis $\frac{1}{3}$–$\frac{1}{2}$-pollicaribus. *Folia* $\frac{1}{2}$–1 poll. longa. *Flores* $\frac{1}{2}$–$\frac{2}{3}$ poll. longi, breviter pedicellati, nutantes, axillis foliorum delapsorum inserti, pedicello una cum ovario $\frac{1}{4}$ poll. longo; bracteæ minutæ; sepala petalaque nervosa; labellum sepalis æquilongum, nervosum, nervis parallelis; columna breviuscula, pede valde elongato una cum basibus sepalorum lateralium mentum calcariformem efficiente.

In the section *Strongyle*, as in *Aporum*, the inflorescence appears to be sometimes terminal, at others lateral or axillary; it is no doubt truly axillary or lateral in all, but appears to be terminal either by the suppression of the upper internodes, or by the slender leafless apex of the stem resembling the rachis of a raceme. In the first specimens of this species that I examined (and described in 'The Flora of British India'), the flower was terminal; in that here figured it is lateral on a leafless stem.—J. D. H.

Fig. 1. Portion of young stem and leaves; of the *natural size.* 2. Flower. 3. Dorsal sepal. 4. Petal. 5. Lip. *All but Fig.* 1 *enlarged.*

M. & de. et lith

Dendrobium Cathcartii, Hk. f.

Plate 2022.

DENDROBIUM CATHCARTII, *Hook. f.*

Orchideæ. Subtribe Dendrobieæ.

D. (Virgatæ) Cathcartii, *Hook. f. Fl. Brit. Ind.* v. 728; caulibus elongatis foliosis, foliis lineari-lanceolatis apice inæqualiter 2-fidis lobis obtusis, floribus binis supra-axillaribus, mento brevi incurvo, sepalo dorsali ovato-lanceolato acuto, lateralibus e basi lata ovato-lanceolatis acuminatis, petalis oblongo-lanceolatis acutis, labello elliptico-oblongo v. lanceolato acuto integerrimo, columna breviuscula apice 2-cuspidata.

Hab. Sikkim Himalaya. (*Ic. Cathcart et Ic. in Hort. Bot. Calcutt.*)

Caules 12–18 poll. longi, crassitie pennæ anatinæ v. anserinæ, internodiis pollicaribus lævibus striatis, infimis non incrassatis. *Folia* 4–6 poll. longa, $\frac{1}{2}$–$\frac{3}{4}$ poll. lata, multinervia, basi semi-amplexicaulia. *Flores* $\frac{1}{2}$–$\frac{3}{4}$ poll. longi, aurei, pedunculo brevissimo inserti, pedicello una cum ovario fere pollicari; sepala nervosa, nervis parallelis; labellum sepalis paullo longius, basi angustatum, 3-nerve, nervo medio valido, lateralibus tenuibus marginem versus ramosis; columna mento subæquilonga, apice sub-2-cuspidata.

Considering the number of collectors who have during the last thirty years ransacked Sikkim, it is singular that no specimens of this very striking species should occur in any Indian herbarium accessible to me. This led me at first to doubt the accuracy of the figure in the fine collection of drawings made under the late Judge Cathcart's direction in Sikkim, and now at Kew; nor should I have ventured to describe it on this alone, were it not confirmed by another figure in the noble collection of drawings belonging to the Calcutta Botanical Gardens, kindly lent by Dr. King. The species is probably most nearly allied to *D. bambusæfolium* of Tenasserim.—J. D. H.

Fig. 1. Lateral sepal, petal, and column. 2. Dorsal sepal. 3. Lip. 4. Anther. 5. Pollen. *All enlarged.*

M. S. del, et lith.

Dendrobium Kunstleri. Hk. f.

Plate 2023.

DENDROBIUM KUNSTLERI, *Hook. f.*

Orchideæ. Subtribe Dendrobieæ.

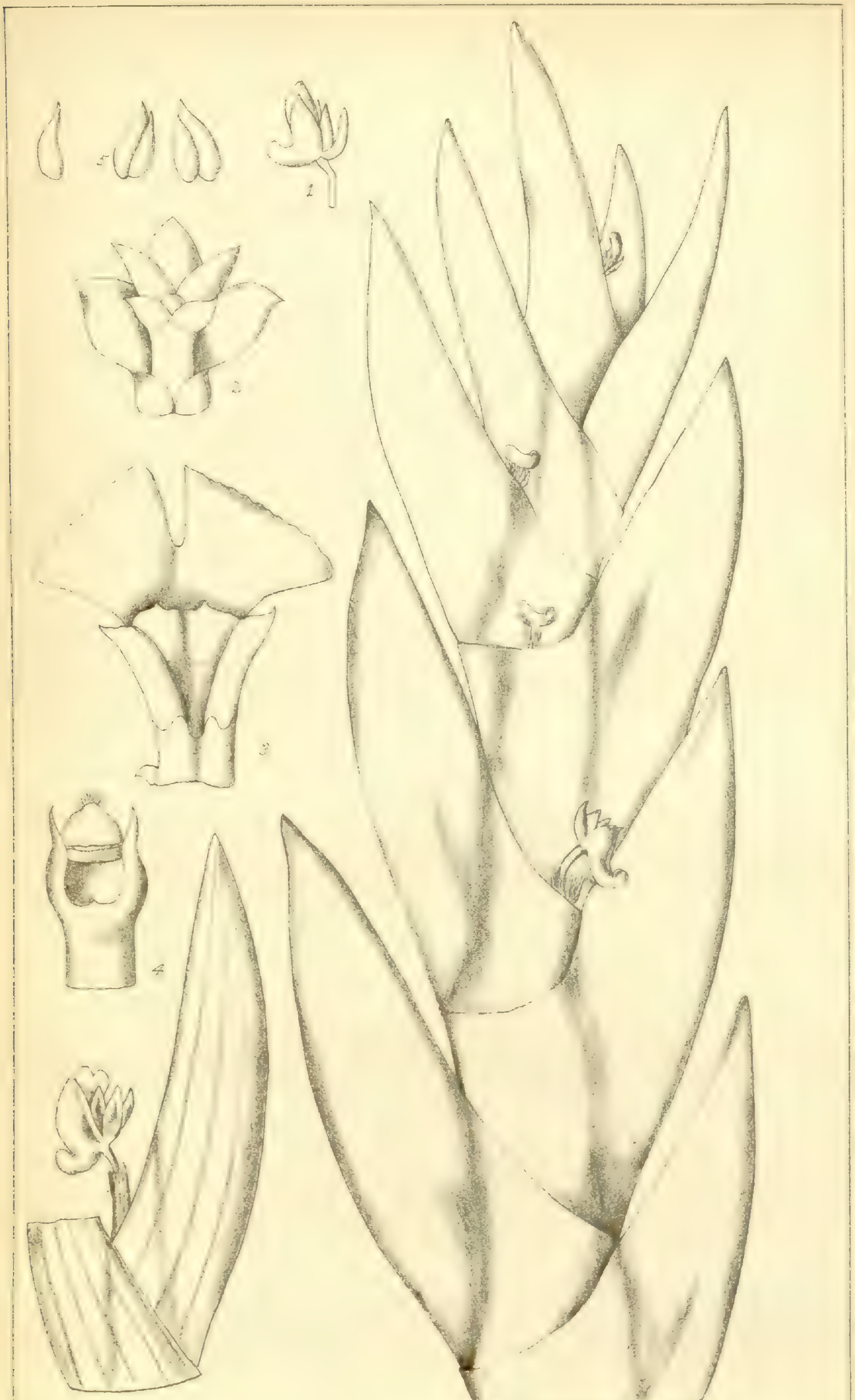
D. (**Cadetia**) **Kunstleri**, *Hook. f. Fl. Brit. Ind.* **v. 714**; pseudobulbis elongatis fusiformibus unifoliatis, folio elliptico-oblongo v. lanceolato obtuso acuto v. acuminato, floribus solitariis? breviter pedicellatis, mento sepalis breviore, sepalis petalisque erecto-patentibus oblongo- v. lineari-lanceolatis acutis, labelli hypochilo cuneato angulis acutis, epichilo hypochilo multo majore quadrato lateribus plicatis et crenatis, disco cristis 3 crenulatis.

Hab. Malay Peninsula; Perak, *Father Scortechini, King's Collector.*

Rhizoma crassitie pennæ anatinæ v. olorinæ. *Pseudobulbi* 2–3-pollicares, $\frac{1}{2}$ poll. diam., teretes. *Folium* 6–10 poll. longum, 2–$3\frac{1}{2}$ poll. latum, valde coriaceum, basi angustatum. *Flores* 1–$1\frac{1}{4}$ poll. longi, membranacei, albi rubro maculati, nervis tenuibus; pedicellus una cum ovario $\frac{1}{3}$ poll. longus, gracilis; mentum conicum, rectum, subacutum; columna brevissima, apice tricuspidata; anthera mitriformis.

The nearest ally of *D. Kunstleri* is the Ceylon *D. Macræi*, which latter has a very wide range in India, from Sikkim to the Nilghiri Hills; and it is also found in Java, if I am right in regarding Blume's *Desmotrichum fimbriatum* as the same specifically. From this *D. Kunstleri* differs in the much larger broader coriaceous leaves, the acute side-lobes of the lip, and very large quadrate mid-lobe, which, though similarly plaited, is not bifid.—J. D. H.

Fig. 1. Flower, with the lip removed. 2. Lip. 3. Anther. *All enlarged.*



M S del. et lith.

Dendrobium grande. Hk.f.

PLATE 2024.

DENDROBIUM GRANDE, *Hook. f.*

ORCHIDEÆ. Subtribe DENDROBIEÆ.

D. (Aporum) grande, *Hook. f. Fl. Brit. Ind.* v. 724; robustum, latissimum, foliis cultriformibus ensiformibusve acutis v. acuminatis, vaginis latis, bracteis fasciculatis subsetaceis, floribus axillaribus solitariis breviter pedicellatis, mento sepalo dorsali æquilongo uncinatim incurvo obtuso, labello cuneato apice flabellatim dilatato 2-lobo lobis truncatis, disco lamella dentata instructo.

HAB. Malay Peninsula; Penang (*ic. in Herb. Kew.*); Perak; *Father Scortechini.* ? S. Andaman Islands.

Caulis 6–18 poll. longus, 1–2½ poll. diam. (foliis inclusis). *Folia* 2–3 poll. longa, basi ¾ poll. lata, recta v. subincurva, nervis utrinque 3–4 obscuris. *Flores* ⅓–½ poll. longi, flavi, rubro-suffusi; pedicello ¼-pollicari, fasciculo bractearum paullo longiore; sepalorum lateralium parte libera triangulari; petala lanceolata, acuta; labellum sepalis lateralibus paullo longius; columna brevis, apice bicuspidata; anthera vertice pilosa.

A very remarkable plant, more than twice as large as any previously described species of the *Aporum* section. The only specimens I have seen are from Perak, and are not in flower; but amongst Father Scortechini's pencil drawings is one of this with rough analyses, which are here copied. The flowers are also represented in a coloured drawing of the Penang plant, from which drawing is taken the portion of stem with leaves and flowers here reproduced.—J. D. H.

Fig. 1. Side view of flower, *slightly enlarged.* 2. Front view of flower. 3. Lip. 4. Column and anther. 5. Pollinia. *All greatly enlarged.*

M S del et lith

Dedrobium tuberiferum Hk. f

Plate 2025.

DENDROBIUM TUBERIFERUM, *Hook. f.*

Orchideæ. Subtribe Dendrobieæ.

D. (Virgatæ) tuberiferum, *Hook. f. Fl. Brit. Ind.* v. 728 ; caule gracili, internodiis basin versus incrassatis costatis, foliis coriaceis linearioblongis obtusis emarginatisve marginibus recurvis, bracteis minutis glabris, floribus solitariis binisve axillaribus et terminalibus breviter pedicellatis, mento sepalo dorsali oblongo-lanceolato duplo longiore incurvo, petalis oblongo-lanceolatis laxe pilosis, labelli hypochilo cuneato-obcordato lobis rotundatis, sinu lamella instructo, epichilo in sinu minuto lanceolato piloso.

Hab. Malay Peninsula, *Father Scortechini* (*Ic.*) ; Singapore, *Murton.* Chittagong (*Ic. in Hort. Calcutt.*)

Caules 12-18 poll. longi, interdum ramosi, crassitie pennæ corvinæ, internodiis $\frac{1}{2}$–1 poll. longis, inferioribus incrassatis fusiformibus v. globosis, sinubus inter costas latis. *Folia* $1\frac{1}{2}$–2 poll. longa, $\frac{1}{4}$–$\frac{1}{3}$ poll. lata, sessilia, patula. *Flores* $\frac{1}{3}$–$\frac{1}{2}$ poll. longi, albi ? ; sepala lateralia triangularia, acuta, nervis nervulisque transversis tenuibus ; petala sepalo dorsali consimilia, subacuta ; labellum sepalis æquilongum, 3-nerve, nervis lateralibus margines versus ramosis ; columna brevissima, pede elongata.

Nearly allied to the Javan *D. Boothii*, figured in Miquel's 'Choix' (t. 24. f. 2), which has larger flowers and fimbriate bracts. The side-lobes of the lip are sometimes almost acute.

The figure of the plant is taken from the Chittagong drawing, which has longer leaves than the Singapore one, and oblong basal internodes. The figure of the flower is of the Singapore plant, which has longer stems, shorter leaves, and a globose basal pseudobulb. These may be different species.—J. D. H.

Fig. 1. Flower of the Singapore plant. *Greatly enlarged.*

VOL. XI.—PART II.] [DECEMBER.

HOOKER'S

ICONES PLANTARUM;

OR,

FIGURES, WITH DESCRIPTIVE CHARACTERS AND REMARKS,

OF NEW AND RARE PLANTS,

SELECTED FROM THE

KEW HERBARIUM.

THIRD SERIES.

EDITED FOR THE BENTHAM TRUSTEES BY

DANIEL OLIVER, F.R.S., F.L.S.

EMERITUS PROFESSOR OF BOTANY IN UNIVERSITY COLLEGE, LONDON; LATE KEEPER OF THE HERBARIUM AND LIBRARY, ROYAL BOTANIC GARDENS, KEW.

Under the Authority of the Director of the Royal Botanic Gardens, Kew.

VOL. XI.

OR VOL XXI. OF THE ENTIRE WORK.

This Volume (XI.) is devoted to Indian Orchidaceæ.
Volume X. is in progress at the same time.

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M. Bdel. del. et lith.

Dendrobium podagraria, Hk f

Plate 2026.

DENDROBIUM PODAGRARIA, *Hook. f.*

Orchideæ. Subtribe Dendrobieæ.

D. (Virgatæ) podagraria, *Hook. f. Fl. Brit. Ind.* v. 728; caulibus elongatis, internodio penultimo v. infimo fusiformi profunde sulcato, foliis linearibus v. lineari-oblongis apice obtusis v. emarginatis, floribus axillaribus solitariis breviter pedicellatis, sepalo dorsali lanceolato lateralibus triangulari-ovatis uncinatis acutis v. obtusiusculis, petalis oblongo-lanceolatis, mento basi rotundato, labello unguiculato obcordato lobis lateralibus rotundatis intermedio orbiculare incumbentibus, callo in sinu labelli unguiformi.—D. angulatum, *Wall. Cat.* 2010; *Lindl. Gen. et Sp. Orchid.* 88 (*non* 66).

Hab. Burma, at the Attran river, *Wallich*; Chittagong (*ic. in Hort. Calcutt.*); Tenasserim, at Mergui, *Griffith*; Moulmein, *Parish.*

Caules 1–3-pedales, sæpe ramosi, crassitie pennæ anatinæ, foliosi, internodio penultimo v. basilari incrassato 1–5-pollicari $\frac{1}{4}$–$\frac{1}{3}$ poll. diam. obtuse 5–6-carinato, ceteris $\frac{1}{2}$–1-pollicaribus teretibus. *Folia* $1\frac{1}{2}$–$2\frac{1}{2}$ poll. longa, $\frac{1}{4}$–$\frac{1}{2}$ poll. lata. *Flores* breviter pedicellati, $\frac{1}{2}$ poll. lati, albi; petala 3-nervia, nervis lateralibus extus ramosis. *Labellum* album, nervis roseis.

Lindley has in his 'Genera and Species,' by an oversight, admitted two plants under the name of *Dendrobium angulatum*, of which the Javanese (*D. homonymum*, Steud. Nomencl. ed. 2. ii. 490), founded on Blume's *Desmotrichum angulatum*, Bijdr. 329, t. 35, has the priority. The swollen basal pseudo-bulbs of the present species strongly resemble those of *D. crumenatum*.—J. D. H.

Fig. 1. Flower, with the lateral sepals drawn aside. 2. Front; and 3. side view of lip. *All enlarged.*

Dendrobium clavipes. Hk f

PLATE 2027.

DENDROBIUM CLAVIPES, *Hook. f.*

ORCHIDEÆ. Subtribe DENDROBIEÆ.

D. (Virgatæ) clavipes, *Hook. f. Fl. Brit. Ind.* v. 728; caulibus gracilibus strictis, internodio basilari ellipsoideo v. globoso, foliis erectis linearibus apice rotundatis, floribus minutis axillaribus solitariis, sepalo dorsali ovato obtuso, lateralibus triangulari-ovatis, petalis elliptico-lanceolatis, labello obcordato basi cuneato, lobis lateralibus rotundatis, intermedio parvo duplo longiore ovato-lanceolato basi (in sinu labelli) caruncula transversa instructo.

HAB. Malay Peninsula; at Perak, *Scortechini*. Distrib. ? Java.

Caules fasciculati, simplices v. ramosi, 6–8 poll. longi, ad basin fere foliosi, internodio infimo $\frac{2}{3}$–1-pollicari $\frac{1}{3}$ poll. diam., ceteris pollicaribus, crassitie pennæ passerinæ v. corvinæ, teretibus, rarius basi incrassatis. *Folia* internodiis duplo longiora, striata, $\frac{1}{8}$ poll. lata, 1-nervia, striata. *Flores* $\frac{1}{4}$ poll. diam., albi? ; mentum basi rotundatum.

A very distinct-looking species, and I think the same as a Javan one that I cannot find described, which has, however, narrow petals and more acute lateral sepals. I have so few flowers of the Perak plant that a strict comparison is not practicable. As in allied species there is a broad flat thickened ridge in the lip from its base to the callus at the base of the mid-lobe.—J. D. H.

Fig. 1. Front; and 2, side view of flower. 3. Flower with the lip drawn down. *All enlarged, fig. 3 greatly.*

M. v. Oel sc. lith.

Dendrobium bolboflorum, Fal-

Plate 2028.

DENDROBIUM BOLBOFLORUM, *Falc.*

Orchideæ. Subtribe Dendrobieæ.

D. (Breviflores) bolbofloruм, *Falc. mss. ex Fl. Brit. Ind.* v. 729; caulibus elongatis v. subfusiformibus, foliis oblongis v. oblongo-lanceolatis acutis, floribus parvis pedunculo brevi fasciculatis, sepalo dorsali late ovato v. oblongo-ovato, lateralibus late triangulari-ovatis, petalis obovatis 5–7-nerviis, mento urceolato, labello hastato-obcuneato apice late truncato subtrilobo, lobis (v. angulis) lateralibus acutis intermedio parvo late triangulari carunculato et pubescente, disco plica transversa utrinque instructo, columnæ pede 3-carinato.

Hab. Sikkim Himalaya; Rungbee, alt. 3,000 feet. *Clarke*; Darjeeling, alt. 7,000 feet, *Gamble*.

Caules fasciculati, curvi v. flexuosi, internodiis 1–1½ poll. longis, cylindraceis v. medio incrassatis et crassitie pennæ anserinæ, nodis fibris vaginarum instructis. *Folia* 2–3 poll. longa, subpetiolata, nervosa. *Flores* ½ poll. lati, flavo-virides, pedicellis brevibus, bracteis scariosis. *Columna* brevissima.

Additional specimens and drawings of this species received from Calcutta since its publication in the 'Flora of British India,' make me doubt whether it is sufficiently distinct from *D. bicameratum*. Mr. Clarke, from examination of fresh specimens in Sikkim, describes the column as very short with two produced spurs at the base. I have so described it in the 'Flora of British India;' but on a careful examination of the column I am disposed to think that the lateral keels of the foot of the column have been taken for spurs, or may assume the form of spurs in living specimens. The appearance of the calli on the lip in the drawing fig. 3, is produced by the folds on the disk of that organ.—J. D. H.

Fig. 1. Flower. 2. The same with the lip removed. 3. Lip. *All enlarged.*

M.S. del. et lith.

Dendrobium cornutum, Hk. f.

Plate 2029.

DENDROBIUM CORNUTUM, *Hook. f.*

Orchideæ. Subtribe Dendrobieæ.

D. (Pedilonium) cornutum, *Hook. f. Fl. Brit. Ind.* v. 730; caule gracili elongato internodiis teretiusculis, foliis lineari-lanceolatis acuminatis, pedunculis brevissimis pauciflоris, bracteis minutis, sepalo dorsali oblongo obtuso 5-nervi, lateralibus consimilibus, petalis sepalis paullo minoribus et angustioribus ellipticis oblanceolatisve obtusis, mento sepalo dorsali subduplo longiore incurvo obtusiusculo, labello anguste spatulato integro, ungue elongato basi callo minuto instructo.

Hab. Malay Peninsula; Perak, summit of Gunong Batu Pateh, *Wray*.

Caules 12-18-pollicares, internodiis inferioribus pollicaribus vestigiis filiformibus vaginarum ornatis. *Folia* 4-pollicaria, $\frac{1}{4}$–$\frac{1}{2}$ poll. lata, membranacea, sub-5-nervia; vagina $\frac{1}{2}$–$\frac{3}{4}$ poll. longa, punctulata. *Flores* caulibus defoliatis orti, pollicares, arcuati, rosei, pedunculo $\frac{1}{4}$-pollicari, 2–4-flore, bracteis $\frac{1}{16}$ poll. longis, pedicellis capillaribus una cum ovario gracili pollicaribus. *Labellum* sepalis æquilongum, obtusum, nervis obscuris; unguis laminæ æquilongus marginibus incurvis, basin prope callo parvo auctus. *Columna* brevis; anthera subhemispherica, glaberrima, longiuscule stipitata.

Near *D. Kuhlii*, Lindl. (Bot. Reg. 1847, t. 47), of Java, which differs in its broad elliptic leaves.—J. D. H.

Fig. 1. Flower. 2. Petal. 3 and 4. Lips. 5. Column. 6. Anther. *All enlarged.*

M. S. del, et lith.

Dendrobium kentrochilum, Hk. f.

Plate 2030.

DENDROBIUM KENTROCHILUM, *Hook. f.*

Orchideæ. Subtribe Dendrobieæ.

D. (Pedilonium) kentrochilum, *Hook. f. Fl. Brit. Ind.* v. 731 ; caule robusto compresso profunde sulcato, foliis oblongis, floribus majusculis nodis defoliatis apicem versus caulis solitariis binisve, sepalis ovato-oblongis obtusis, petalis paullo minoribus late obovatis v. suborbicularibus, mento sepalis breviore obtuso, labello rhombeo-obovato trilobo, ungue basin versus calcare elongato instructo.

Hab. Malay Peninsula ; Perak, in the Balung Padung Valley, *Wray*.

Caulis 8–10-pollicaris, internodiis inferioribus $\frac{1}{2}$–$\frac{2}{3}$ poll. longis, internodiis foliiferis 1–$1\frac{1}{2}$-pollicaribus, $\frac{1}{3}$ poll. diam., dein sensim angustioribus, supremis vagina brevi ovata fissa instructis. *Flores* 1–$1\frac{1}{4}$ poll. longi, latiusculi, expansi 1 poll. lati, albi ; pedicellis una cum ovariis gracilibus $\frac{3}{4}$-pollicaribus. *Sepala* et *petala* obtusa, nervis obscuris *Labellum* fere flabelliforme, lamina ungui æquilonga, 3-loba, lobis rotundatis interdum fere obsoletis, intermedio lateralibus latiore. *Columna* brevis, lateribus utrinque in calcar recurvum productis ; anthera pileiformis, brevissime stipitata.

The specimens of this curious species are in very poor condition, and probably some allowance will have to be made for both the drawing and description. It is not, perhaps, a typical *Pedilonium* in habit, inflorescence or lip ; but, considering the variations that occur in the floral organs of that section, and taking into account the spur on the claw of the lip, I think it is best placed there.—J. D. H.

Fig. 1. Part of flower. 2. Lip. 3. Column. 4. Anther. *All enlarged.*

M.S. del et lith

Dendrobium megaceras, Hk. f.

Plate 2031.

DENDROBIUM MEGACERAS, *Hook. f.*

Orchideæ. Subtribe Dendrobieæ.

D. (Pedilonium) megaceras, *Hook. f. Fl. Brit. Ind.* v. 731 ; caule gracili sulcato, foliis oblongo-lanceolatis acuminatis, pedunculis paucifloris, floribus majusculis, bracteis minutis, sepalo dorsali ovato v. elliptico-oblongo obtuso 7-nervi, lateralibus subsimilibus, petalis obovatis 7-nerviis, mento sepalis 2–3-plo longiore, labello cuneato 3-lobo, lobis crenatis dentatis lateralibus parvis intermedio suborbiculari late retuso, ungue breviusculo lamella v. carina elongata instructo.

Hab. Malacca, *Maingay* (Kew distrib. 1613).

Caules bipedales, internodiis 1–1¼ poll. longis, defoliatis profunde sulcatis. *Folia* 3–4 poll. longa, ¾–1 poll. lata, submembranacea, sub-7-nervia. *Flores* caulibus defoliatis orti, 1½ poll. longi, vix arcuati, sordide flavo-virides, mento subroseo, pedunculo unacum rachi ½ 1-pollicari 4–5-floro, pedicellis brevibus, bracteis parvis recurvis. *Labellum* sepalis æquilongum, ungue brevi in laminam sensim dilatato, lobis lateralibus subtruncatis intermedio brevioribus. *Columna* brevis, lateribus superne obtusis ; antheræ stipite longiusculo.—J. D. H.

Fig. 1. Flower, with the lip removed. 2. Dorsal sepal. 3. Petal. 4. Lip. 5. Column. *All enlarged.*

M. S. del. et lith

Dendrobium hymenopterum. Hk. f.

Plate 2032.

DENDROBIUM HYMENOPTERUM, *Hook. f.*

Orchideæ. Tribe Dendrobieæ.

D. (Pedilonium) hymenopterum, *Hook. f. Fl. Brit. Ind.* vi. 185, et v. 732 (*hymenanthum*); caule gracili elongato, internodiis sulcatis, foliis oblongo-lanceolatis coriaceis, floribus solitariis?, sepalo dorsali ovato obtuso, lateralibus ovato-lanceolatis subacutis, petalisque ellipticis obtusis sub-7-nerviis, mento sepalo dorsali subduplo longiore obtuso, labelli limbo late obovato denticulato in unguem gracilem marginibus involutis angustato, basin versus callis 2 elongatis instructo.

Hab. Malay Peninsula; Perak, on Gunong Batu Pateh, alt. 3,400 feet, *Wray*.

Caules 10–12-pollicares, vix $\frac{1}{4}$ poll. diam., internodiis pollicaribus. *Folia* 3–4 poll. longa, $\frac{2}{3}$–$\frac{3}{4}$ poll. lata, sub-7-nervia, apicibus obliquis. *Flores* $\frac{3}{4}$ poll. diam., albi, roseo et viridi tincti, membranacei, pedicellis brevibus. *Labellum* sepalis æquilongum. *Columna* brevissima, lateribus utrinque in auriculam recurvam obtusam postice unidentatam productis.

I know of no species at all like this. The specimens are far from good, and as with *D. kentrochilum*, Plate 2030, some allowance may have to be made for the description and figure. In these large genera of Orchids, it is almost impossible without the aid of figures to determine the species with much confidence, and the resources of this work enable me to establish many of these with greater prospect of recognition than by the most careful description alone. In the fifth volume of 'Flora of British India' the name *hymenanthum*, which is preoccupied, was by oversight applied to this plant. It is replaced by *hymenopterum* in the supplement to the *Orchideæ* of the succeeding volume.—J. D. H.

Fig. 1. Flower, with lip removed. 2. Lip. 3. Side; and 4, front view of column. *All enlarged.*

M.S.del.et lith.

Dendrobium moulmeinense, Par.

PLATE 2033.

DENDROBIUM MOULMEINENSE, *Parish.*

ORCHIDEÆ. Tribe DENDROBIEÆ.

D. (**Eudendrobium**) **moulmeinense**, *Parish mss. in Fl. Brit. Ind.* v. 746; caulibus gracilibus, foliis anguste lineari-lanceolatis, racemis 3–5-floris gracilibus, pedicellis gracilibus, bracteis parvis ovatis, sepalis oblongo-lanceolatis subacutis, petalis elliptico-ovatis acutis erosis, mento brevi subcylindrali obtuso, labello subsessili orbiculari expanso ima basi cuneato convoluto, ambitu fimbriato supra puberulo.

HAB. Tenasserim; hills near Moulmein, *Parish.*

Caules crassitie pennæ anserinæ, penduli, teretiusculi, vaginati, internodiis pollicaribus. *Flores* caulibus defoliatis orti, $1\frac{1}{4}$–2 poll. diam., membranacei, pallide lutei; pedunculo brevi unacum rachi 1–2-pollicari gracili subflexuoso, basi squamis brevibus arcte vaginato, bracteis $\frac{1}{6}$ poll. longis concavis, pedicellis unacum ovario pollicaribus gracilibus. *Labellum* amplum, 1 poll. diam., primulinum, basi maculatum. *Columna* brevis, superne utrinque rotundata; anthera pileiformis, apice subbiloba.

D. moulmeinense belongs to the same group as *D. dixanthum*, Reichb. f. (Bot. Mag. t. 5564), and is a native of the same country; it differs from that species in the more slender stems, pendulous habit, the bracts (which are almost obsolete in *dixanthum*), and in the deeper fimbriation of the lip. The racemes, too, are not whorled as in that plant; nevertheless it may prove to be a handsome form of it.—J. D. H.

Fig. 1. Petal. 2. Portion of upper surface of lip. 3. Column. 4. Anther. 5. Pollinia. *All enlarged.*

Bulbophyllum membranifolium, Hk.f.

Plate 2034.

BULBOPHYLLUM MEMBRANIFOLIUM, *Hook. f.*

Orchideæ. Subtribe Dendrobieæ.

B. (Eubulbophyllum) membranifolium, *Hook. f. Fl. Brit. Ind.* v. 756 ; pseudobulbis angustis subcylindraceis, foliis elliptico-lanceolatis in petiolum sensim angustatis membranaceis, scapo brevi univaginato unifloro, pedicello gracili, floribus majusculis, sepalis ovato-oblongis lanceolatisve obtusis lateralibus deflexis, petalis sepalis minoribus ovato-lanceolatis subacutis, labello parvo stipitato linguiformi revoluto apicem versus verrucoso, columnæ ramis 2 crassiusculis porrectis.

Hab. Malay Peninsula ; Perak, on Gunong Batu Pateh, *Wray*.

Rhizoma repens, diam. pennæ corvinæ, nudum, radicans. *Pseudobulbi* 1–1½ poll. longi, nudi, inferne paullo turgidi, teretes. *Folia* 6–10-pollicaria, multinervia, et transverse nervulosa. *Pedunculus* brevis, basi vaginatus, bractea lanceolata longe acuminata pedicello gracili pollicari multo breviore terminatus. *Flos* 1½ poll. expansus, sepalis subæqualibus petalisque multi-nervosis pallide flavo-viridibus punctis coccineis striolatis. *Labellum* carnosum, purpureum, basi truncatum. *Columna* brevis, truncata.

A very well-marked species of the single-flowered section of the genus, remarkable for the membranous leaves and the sides of the column not being produced into teeth or spines, but having two projecting fleshy obtuse arms that are decurved, with often ascending tips.—J. D. H.

Fig. 1. Flower. 2. Column, with its foot and lip. *Enlarged.*

Bulbophyllum confertum, Hk. f

Plate 2035.

BULBOPHYLLUM CONFERTUM, *Hook. f.*

Orchideæ. Subtribe Dendrobieæ.

B. (**Eubulbophyllum**) **confertum**, *Hook. f. Fl. Brit. Ind.* v. 757; rhizomate gracili, pseudobulbis anguste ampulliformibus, foliis linearilanceolatis acutis in petiolum angustatis, scapo e basi psendobulbi adscendente gracili folio multoties breviore, floribus 3–6 ad apicem scapi confertis, bracteis parvis, sepalis ovato-lanceolatis lateralibus caudato-acuminatis 3-nerviis, petalis sepalo dorsali æqualibus serrulatis, labello minuto stipitato recurvo, columna apice bicuspidata.

Hab. Eastern Bengal; Khasia Hills, *Griffith*, etc. (Kew distrib. 5170).

Rhizoma gracile, diam. pennæ passerinæ, radicibus copiosis. *Pseudobulbi* conferti, $\frac{2}{3}$–$\frac{3}{4}$ poll. longi, vaginati. *Folia* $2\frac{1}{2}$–$3\frac{1}{2}$ poll. longa, coriacea, petiolo interdum pollicari. *Scapus* $1\frac{1}{2}$-2 poll. longus, medio vagina minuta instructus; bracteæ ovato-lanceolatæ, pedicellis $\frac{1}{6}$ poll. longis breviores v. subæquantes. *Flores* $\frac{1}{2}$–$\frac{2}{3}$ poll. longi; sepalum dorsale lateralibus triente breviore marginibus sub-erosis; petala sepalo dorsali latiora, 3–5-nervia. *Labellum* linguiforme, obtusum, basi cordatum. *Columna* brevis, dorso 3-dentata, lateribus apice breviter subulatis.—J. D. H.

Fig. 1. Top of scape, bracts and flowers. 2. Lateral; and 3, front view of flower. 4. Lip. 5. Column. 6. Anther. *All enlarged.*

M.S.del,et lith

Bulbophyllum cauliflorum, Hk. f.

Plate 2036.

BULBOPHYLLUM CAULIFLORUM, *Hook. f.*

Orchideæ. Subtribe Dendrobieæ.

B. (**Eubulbophyllum**) **cauliflorum**, *Hook. f. Fl. Brit. Ind.* v. 758; rhizomate valido elongato, pseudobulbis remotis elongatis subcylindraceis, foliis oblongo- v. lineari-oblongis obtusis, scapis e vaginis rhizomatis a pseudobulbis longe remotis erumpentibus brevibus multivaginatis, floribus subterminalibus parvis, sepalis subæqualibus lanceolatis caudato-acuminatis petalisque minoribus 3-nerviis, labello parvo stipitato obtuso, columna apice bicalcarata.

Hab. Sikkim Himalaya and the Khasia Hills; *Griffith's Collectors*, &c. (Kew distrib. 5165, 5139).

Rhizoma crassitie pennæ anserinæ, cylindraceum, teres, ad basin pseudobulborum solo radicans, vaginis tubulosis brevibus truncatis seriatim instructum. *Pseudobulbi* $1\frac{1}{2}$–2 poll. longi, teretes, nudi. *Folia* 2–5 poll. longa, subsessilia v. breviter petiolata, coriacea. *Scapi* $\frac{1}{2}$–$\frac{2}{3}$ poll. longi, graciles, vaginis brevibus acutis interdum fere tecti. *Flores* 3–6, subumbellati, $\frac{1}{4}$–$\frac{1}{3}$ poll. longi, flavo-virides; bracteæ pedicellis brevibus breviores; sepalum dorsale lateralibus paullo brevius; petala sepalis triente breviora. *Labellum* breviter stipitatum, ovato-oblongum, obtusum, vix recurvum, disco 3-carinato. *Columna* brevissima, lateribus in spinas decurvas columna longiores productis.

The habit of this and the following species (*B. protractum*) is curious. The rhizome is very long, flexuous, and the pseudobulbs are sometimes six inches apart, the intervening space presenting at every node a short tubular sheath, from several of which solitary scapes arise. These sheathed internodes rarely produce roots, except when they produce a pseudobulb, and in this case I have never found a scape. The same arrangement, but in a less conspicuous degree, occurs in *B. odoratissimum*.—J. D. H.

Fig. 1. Side; and 2, front view of flower. 3. Lip. 4. Column. *All enlarged.*

M.S.del.et lith.

Bulbophyllum protractum, Hk. f.

PLATE 2037.

BULBOPHYLLUM PROTRACTUM, *Hook. f.*

ORCHIDEÆ. Tribe DENDROBIEÆ.

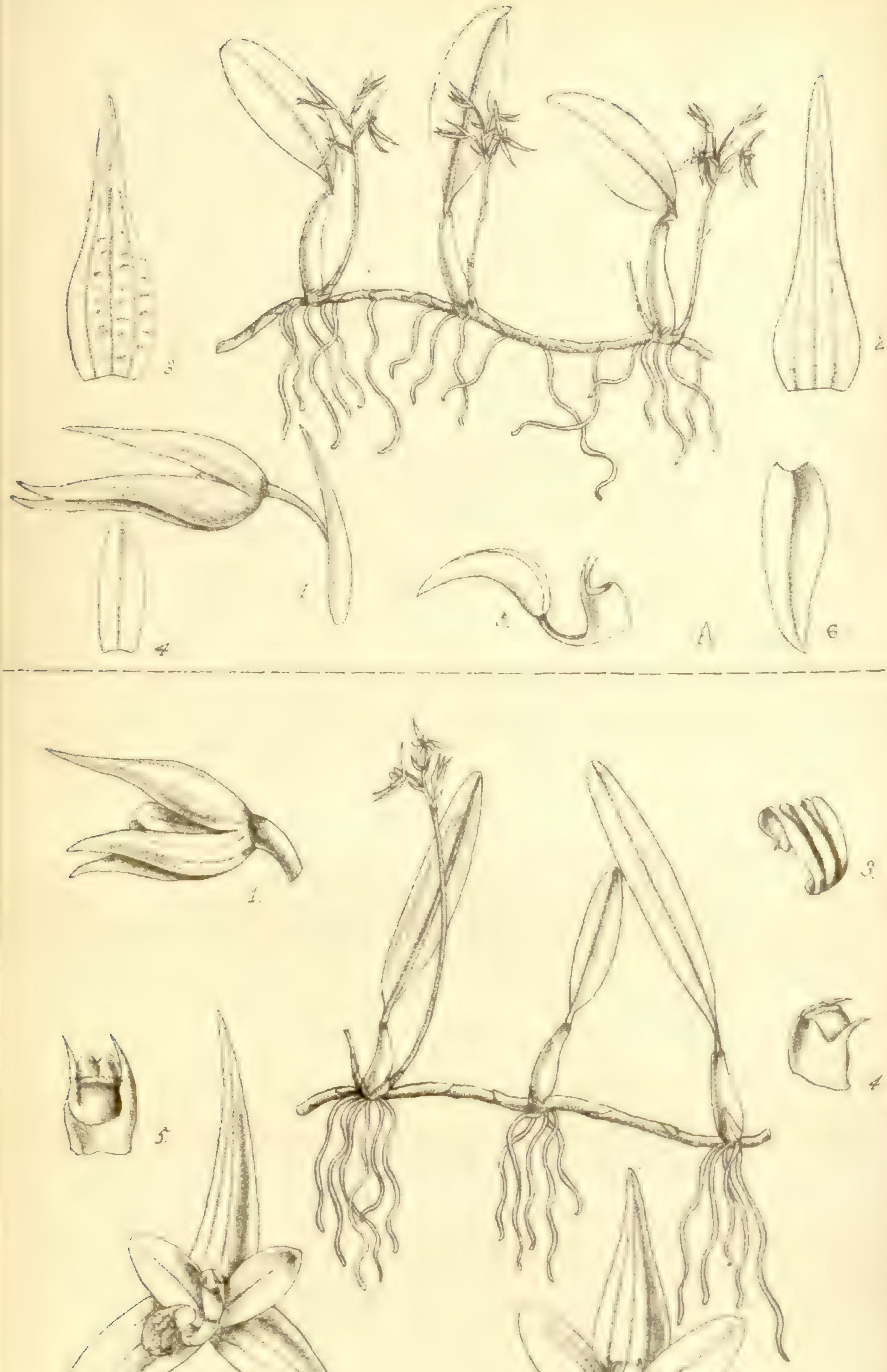
B. (**Eubulbophyllum**) **protractum,** *Hook. f. Fl. Brit. Ind.* v. 758; rhizomate elongato vaginato, pseudobulbis remotis subcylindraceis, foliis lineari-lanceolatis acutis submembranaceis, scapis plerisque e vaginis rhizomatis a pseudobulbis remotis erumpentibus brevibus pauci-vaginatis, floribus subumbellatis minutis, sepalis lanceolatis acuminatis petalisque subæqualibus acuminatis 3-nerviis, labello minuto subsessili, columna apice bicuspidata.

HAB. Tenasserim, or the Andaman Islands, *Helfer* (Kew distrib. 5164).

Rhizoma crassitie pennæ corvinæ v. anatinæ, vaginis imbricatis tubulosis oblique truncatis auctum. *Pseudobulbi* $\frac{3}{4}$–1 poll. longi, teretes, cylindracei v. inferne sensim ampliati, nudi. *Scapi* pollicares, capillares, vaginis paucis tubulosis acutis instructi; bracteæ minutæ pedicellis $\frac{1}{10}$ poll. longis breviores. *Flores* 4–6, $\frac{1}{6}$ poll. longi; sepalo dorsali lateralibus paullo breviore. *Labellum* minimum, ovato-lanceolatum, obtusum, lente recurvum. *Columna* brevis, cuspidibus subulatis erectis.

An insignificant species, which was contained in a bundle of Helfer's plants collected either in Tenasserim or the Andaman Islands, the vegetation of which latter partakes of the characters of the former.—J. D. H.

Fig. 1. Side; and 2, front view of flower. 3. Lip. *All enlarged.*



A. Bulbophyllum concinnum. Hk. f.
B _____ modestum, Hk. f.

Plate 2038.

A.—BULBOPHYLLUM CONCINNUM, *Hook. f.*

B.—BULBOPHYLLUM MODESTUM, *Hook. f.*

Orchideæ. Subtribe Dendrobieæ.

A.—**B.** (**Eubulbophyllum**) **concinnum**, *Hook. f. Fl. Brit. Ind.* vi. 189; pusillum, rhizomate gracili vaginato, pseudobulbis subcylindraceis nudis, foliis sessilibus ellipticis v. oblongis, scapo ad basin pseudobulbi folio breviore capillari vaginis parvis 1–2 instructo, floribus 3–5 minutis subterminalibus, sepalis ovato-lanceolatis acutis 3-nerviis dorsali lateralibus paullo breviore, petalis multo minoribus lineari-oblongis obtusis 1-nerviis, labello minimo recurvo, columna bisetosa.—? B. striatellum, *Ridley in Ann. Bot.* iv. (1890), *t.* 22, *fig.* 7–9, *non* p. 335.

Hab. Singapore; at Chan Chu Rang, *Ridley.*

Rhizoma crassitie pennæ passerinæ. *Pseudobulbi* remoti, $\frac{1}{2}$ poll. longi, teretes, interdum inferne paullo ampliati. *Folia* $\frac{3}{4}$–1 poll. longa, obtusa v. subacuta, coriacea. *Scapi* $\frac{3}{4}$ poll. longi, capillacei; bracteæ lanceolatæ, pedicellos $\frac{1}{12}$ poll. longos subæquantes v. breviores. *Flores* $\frac{1}{6}$ poll. longi, pallide aurantiaci, cellulares; sepala 2 e basi ovata lanceolata, petala apice rotundata. *Labellum* linguiforme, saturate aurantiacum. *Columna* brevis, cuspidibus setaceis recurvis.

The flower of *B. concinnum* precisely accords with the figure of that of *B. striatellum* cited above, in so far as can be judged from comparison of dried and afterwards moistened specimens of the former with living ones of the latter; but the description of *striatellum* must belong to a different plant from the figure, for its scape is 1-fld., the petals are stated to be nearly as long as the sepals (less their attenuated points), the lip to be hairy beneath, and the cusps of the column short and obtuse. *B. concinnum* further differs from the description of *striatellum* in the broad leaves, and in the sheaths of the scape not being basal.—J. D. H.

Plate 2038 A. Fig. 1. Flower and bract. 2. Lateral; and 3, dorsal sepal. 4. Petal. 5. Column, with its foot and lip. 6. Lip. *All enlarged.*

B.—**B.** (**Eubulbophyllum**) **modestum**, *Hook. f. Fl. Brit. Ind.* v. 759 pusillum, rhizomate gracili vaginato, pseudobulbis anguste ovoideis

M.S.del.et lith

A. Bulbophyllum leptanthum, Hk. f
B. _____ Gamblei, Hk.f.

Plate 2039.

A.—BULBOPHYLLUM LEPTANTHUM, *Hook. f.*

B.—BULBOPHYLLUM GAMBLEI, *Hook. f.*

Orchideæ. Subtribe Dendrobieæ.

A.—**B.** (**Eubulbophyllum**) **leptanthum**, *Hook. f. Fl. Brit. Ind.* v. 759; rhizomate vaginato, pseudobulbis subremotis anguste ovoideis basi vaginatis, foliis lineari-oblongis obtusis subpetiolatis, scapo ad basin pseudobulbi folio multoties breviore capillari 1–2-vaginato, floribus 3–5 parvis subterminalibus breviter pedicellatis, bracteis lanceolatis, sepalis subæqualibus anguste lanceolatis longe acuminatis trinerviis lateralibus recurvis, petalis sepalis multoties brevioribus lineari-oblongis obtusis 1-nerviis, labello obtuso basi utrinque dilatato, columna utrinque apice 2-loba.

Hab. Eastern Bengal; on the Khasia Hills, alt. 4,000–5,000 ft., common.

Rhizoma crassitie pennæ perdicis, vaginis imbricatis. *Pseudobulbi* $\frac{3}{4}$–1-pollicares, teretes. *Folia* 2–$3\frac{1}{2}$ poll. longa, basi angustata. *Scapi* 1–$1\frac{1}{2}$ poll. longi, capillares, vaginis 1–2 tubulosis instructi; bracteæ lanceolatæ, pedicellos breves subæquantes. *Flores* $\frac{1}{4}$ poll. longi, flavidi ?, odorati; sepala angusta, dorsali lateralibus paullo breviori; petala apice rotundata. *Labellum* breve, recurvum, lateribus basi rotundatis. *Columna* apicem versus utrinque dilatata 2-loba, lobis brevibus divaricatis postico acuto, antico obtuso.

Owing to the minuteness of the flowers, and their distortion by drying, it is difficult to make out the structure of the column, but I think it is as described and figured. A very closely allied undescribed species from the Khasia Hills (*Griffith*, Kew distrib. 5132) differs from this in having long lanceolate petals like *B. Gamblei*; but the rhizome is very much stouter and the flowers minute. The flowers more resemble *B. confertum*, but the leaves are very different, and exactly as in *leptanthum*. The specimens are so very scanty that I hesitate to describe it as new.—J. D. H.

Plate 2039 A. Fig. 1. Flower. 2. Petal. 3. Lip. 4. Column. *All greatly enlarged.*

B.—**B.** (**Eubulbophyllum**) **Gamblei**, *Hook. f. Fl. Brit. Ind.* vi. 187 rhizomate gracili nudo, pseudobulbis anguste pyriformibus, foliis

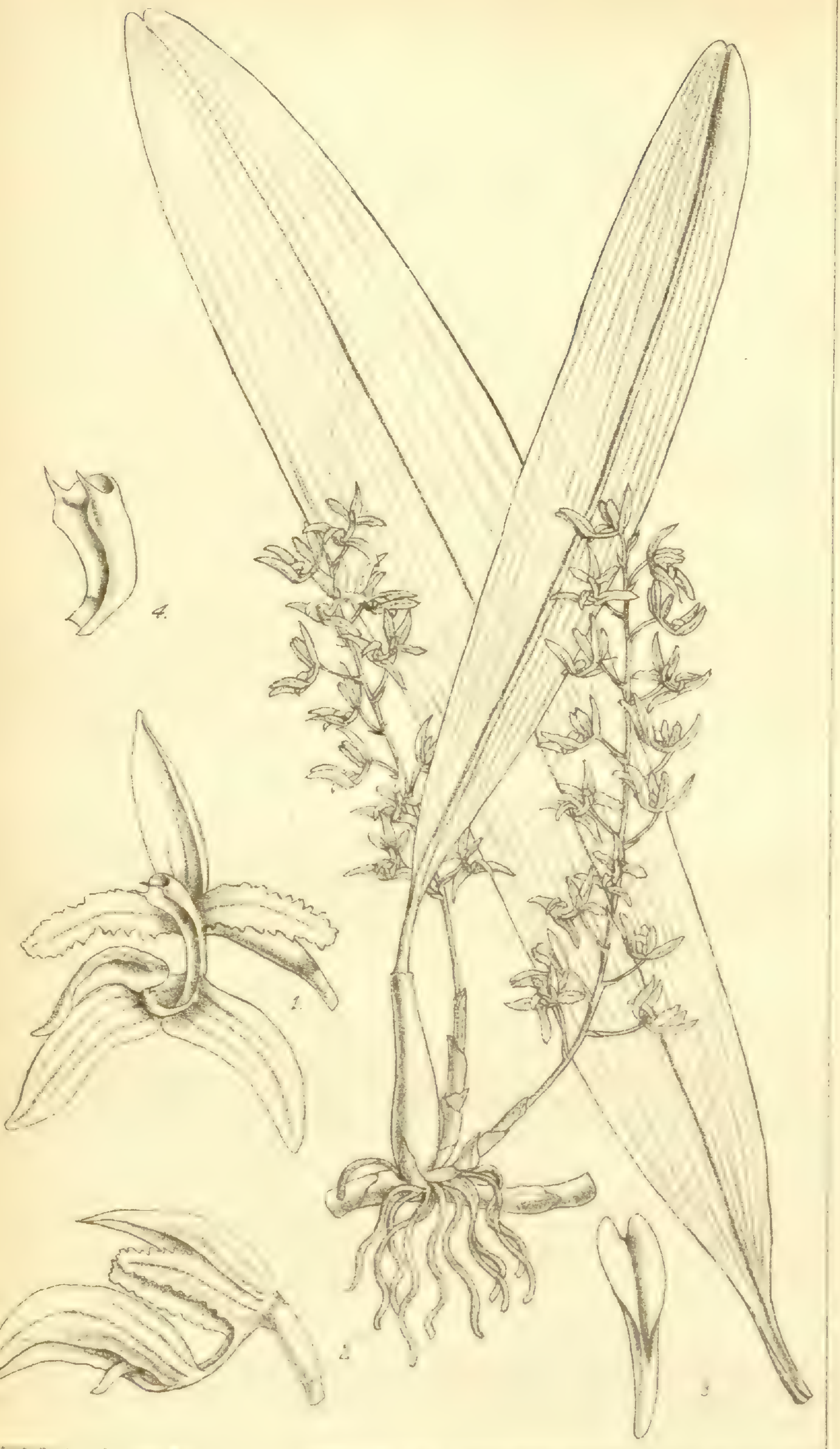
lineari-oblongis obtusis, scapo ad basin pseudobulbi filiformi folio æquilongo 1-vaginato, floribus 3–5 subterminalibus breviter pedicellatis, sepalis subæqualibus lanceolatis longe acuminatis 3-nerviis dorsali minore, petalis sepalis dimidio brevioribus lanceolatis acuminatis 1-nerviis, labello stipitato lanceolato recurvo, columna bisetosa.—B. leptanthum, *var.* Gamblei, *Hook. f. Fl. Brit. Ind.* v. 759.

Hab. Sikkim Himalaya, at Goompahar, alt. 7,000 ft., *Gamble*.

Rhizoma crassitie pennæ passerinæ. *Pseudobulbi* $\frac{1}{2}$ poll. longi, superne attenuati, basi vaginati. *Folia* $1\frac{1}{2}$ poll. longa, vix petiolata. *Scapus* infra medium vagina instructus; bracteæ lanceolatæ, pedicellis breviores. *Flores* $\frac{1}{3}$–$\frac{1}{2}$ poll. longi; sepalum dorsale lateralibus decurvis paullo brevius et angustius. *Labellum* basi cordatum, medio sulcatum. *Columnæ* setæ aciculares, elongatæ, arcuatæ.

When analysing the host of small-flowered *Bulbophylla* for the 'Flora of British India,' I doubtfully placed this under *B. leptanthum* as a variety. The subsequent analysis of more flowers for figuring in this work and comparison with others of *B. leptanthum* show it to be a very distinct species.—J. D. H.

Plate 2039 B. Fig. 5. Flower. *Greatly enlarged.*



M. S. del. et lith

Bulbophyllum gymnopus, Hk. f.

Plate 2040.

BULBOPHYLLUM GYMNOPUS, *Hook. f.*

Orchideæ. Subtribe Dendrobieæ.

B. (**Eubulbophyllum**) **gymnopus**, *Hook. f. Fl. Brit. Ind.* v. 764; pseudobulbis angustis, foliis linearibus v. lineari-oblongis breviter petiolatis apice emarginatis v. bifidis crassis, scapo brevi rigido, infra medium vaginato vaginis imbricatis, racemo foliis breviores multifloro, bracteis parvis, sepalo dorsali lanceolato, lateralibus ad apicem pedis columnæ elongati nudi insertis lineari-oblongis obtusiusculis falcatis, petalis linearibus denticulatis, labello breviter stipitato recurvo. Bulbophyll. sp. *Griff. Notul.* iii. 294; *Itin. notes*, 104; *Ic. Plant. Asiat.* t. 297 (*ic. valde aucta*).

Hab. Bhotan Himalaya, alt. 2,000 feet, *Griffith* (Kew distrib. 5133). Khasia Hills, *Griffith* (Kew distrib. 5134), alt. 3,500 feet, *Clarke*.

Rhizoma validum, vaginatum. *Pseudobulbi* 1–1½ poll. longi, anguste obovoidei, teretes. *Folia* 4–7 poll. longa, ⅔–1¼ poll. lata. *Scapi* ad basin pseudobulbi solitarii v. plures, 1–1½ poll. longi, unacum racemo 2–3-pollicares, multiflori, sæpe flexuosi; bracteæ ovatæ, pedicello gracili unacum ovario ⅓ poll. longo multo breviores. *Flores* pallide albo-virides, ½ poll. diam.; sepala 3-nervia; petala sepalis fere æquilonga, 1-nervia. *Labellum* lanceolatum, basi cordatum, in apicem teretem obtusum contractum. *Columna* brevissima, 2-cuspidata.

The naked foot of the column is like that of *B. Wrayii* (Plate 2044), but longer in proportion, and as in *Henosis* (Plate 2051, *ined.*).—J. D. H.

Fig. 1. Front; and 2, side view of flower. 3. Lip. 4. Column. *All enlarged.*

M. S. del. et lith

Bulbophyllum Thomsoni, Hk f.

Plate 2041.

BULBOPHYLLUM THOMSONI, *Hook. f.*

Orchideæ. Subtribe Dendrobieæ.

B. (Eubulbophyllum) Thomsoni, *Hook. f. Fl. Brit. Ind.* v. 764; pseudobulbis depresso-obturbinatis obliquis, foliis lineari-oblongis breviter petiolatis sæpe falcatis, scapo gracili elongato, racemo erecto densifloro, floribus breviter pedicellatis, bracteis minutis acutis, sepalis ovato-lanceolatis acuminatis, petalis sepalis dimidio brevioribus obtusis ciliatis, labello breviter stipitato obtuso villoso.

Hab. Sikkim Himalaya, *Thomson* (in *Herb. Calcutt.*).

Rhizoma validum, nudum, ubique radicans. *Pseudobulbi* remoti, $\frac{2}{3}$–1 poll. diam., basibus rhizoma sæpe amplectentibus, apice rotundatis v. intrusis. *Folia* 4–6 poll longa, obtusa v. subacuta, multinervia, vix coriacea. *Scapus* 3–4-pollicaris, medio et basin versus vaginatus; racemus 3–4-pollicaris, subdecurvus. *Flores* suberecti, $\frac{1}{4}$ poll. longi, pallide virides, bracteis ovatis pedicellis $\frac{1}{8}$ poll. longis brevioribus; sepala obscure denticulata, 3-nervia; petala obtusa. *Labellum* a latere compressum, crassiusculum, apice rotundatum, basin versus bicarinatum. *Columna* bicuspidata.—J. D. H.

Fig. 1. Bract and side view of flower. 2. Front view of flower. 3. Petal. 4. Lip. 5. Column. *All enlarged.*

M. S. del et lith.

Bulbophyllum secundum, Hk.f.

PLATE 2042.

BULBOPHYLLUM SECUNDUM, *Hook. f.*

ORCHIDEÆ. Subtribe DENDROBIEÆ.

B. (**Eubulbophyllum**) **secundum**, *Hook. f. Fl. Brit. Ind.* v. 764; pseudobulbis parvis globosis subglobosisve, foliis linearibus v. linearioblongis obtusis, scapo gracili folio longiore, racemo suberecto multifloro, floribus parvis breviter pedicellatis secundis, bracteis minutis, sepalis ciliolatis dorsali ovato obtuso, lateralibus late ovatis obtusis, petalis spatulato-oblongis obtusis crinitis, labello breviter stipitato ovato-cordato ciliato.

HAB. Upper Assam; on Mount Kohima in the Naga Hills, *Prain*.

Rhizoma flexuosum, nudum, crassitie pennæ corvinæ. *Pseudobulbi* $\frac{1}{3}$–$\frac{1}{2}$ poll. diam., læves. *Folia* $1\frac{1}{2}$–$2\frac{1}{2}$ poll. longa, breviter petiolata, nervosa. *Scapus* cum racemo folio duplo longior, vaginis infra medium 2–3 parvis; racemus scapo subæquilongus, gracilis. *Flores* horizontales v. decurvi, ad $\frac{1}{10}$ poll. longi; bracteæ pedicellis $\frac{1}{2}$ poll. longis breviores; sepala sub lente ciliolata; dorsale 1-nerve, lateralia 3-nervia; petala sepalis triente breviora, apice rotundata, uninervia, infra medium glabra. *Labellum* recurvum, pro genere majusculum, sepalis paullo brevius, in apicem teretem obtusum glaberrimum contractum. *Columma* breviter bicuspidata.—J. D. H.

Fig. 1. Side; and 2, front view of flower. 3. Dorsal; and 4, lateral sepal (too equal-sided in form). 5. Petal. 6. Column and lip. 7. Lip. *All enlarged.*

M. S. del, et lith.

Bulbophyllum apodum, Hk. f.

Plate 2043.

BULBOPHYLLUM APODUM, *Hook. f.*

Orchideæ. Subtribe Dendrobieæ.

B. (**Eubulbophyllum**) **apodum**, *Hook. f. Fl. Brit. Ind.* v. 766; pseudobulbis obsoletis parvulisve, foliis elongatis lineari-oblongis v. oblanceolatis obtusis petiolatis, scapo brevi rigido vaginis rigidis vestito, racemo elongato laxifloro, bracteis minutis, floribus parvis breviter pedicellatis, sepalis subæqualibus lanceolatis acuminatis, petalis lineari-oblongis lanceolatisve, labello sessili oblongo basi utrinque lobato v. auriculato.

Hab. Malay Peninsula; Perak, top of Batu Kuran, *Scortechini*; Malacca, *Maingay* (Kew distrib. 1619).

Rhizoma robustum, nudum, radicans. *Pseudobulbi* nulli v. pisiformes, vaginati. *Folia* 5–8 poll. longa, coriacea, multinervia, petiolo 1–3-pollicari. *Scapus* erectus, unacum racemo 3–5-pollicaris, basi incrassatus, fere ad basin florens; bracteæ acutæ; pedicelli $\frac{1}{8}$ poll. longi. *Flores* $\frac{1}{6}$ poll. lati, suberecti, flavo-virides; sepala 1-3-nervia; petala sepalis dimidio minora, 1-nervia. *Labellum* latitudine varium, obtusum v. subacutum, lobuli versus basin rotundati v. subtriangulares patentes v. conniventes. *Columna* breviter bicuspidata.

The lip seems variable in form, but it is very difficult to determine its configuration from herbarium specimens, as indeed is the case in all the species of this genus.—J. D. H.

Fig. 1. Flower, side view; and 2, front view (the dorsal sepal too small). 3, 4, and 5, various appearances of lips. *All enlarged.*

M. S. del, et lith.

Bulbophyllum Wrayi, Hk. f.

Plate 2044.

BULBOPHYLLUM WRAYII, *Hook. f.*

Orchideæ. Subtribe Dendrobieæ.

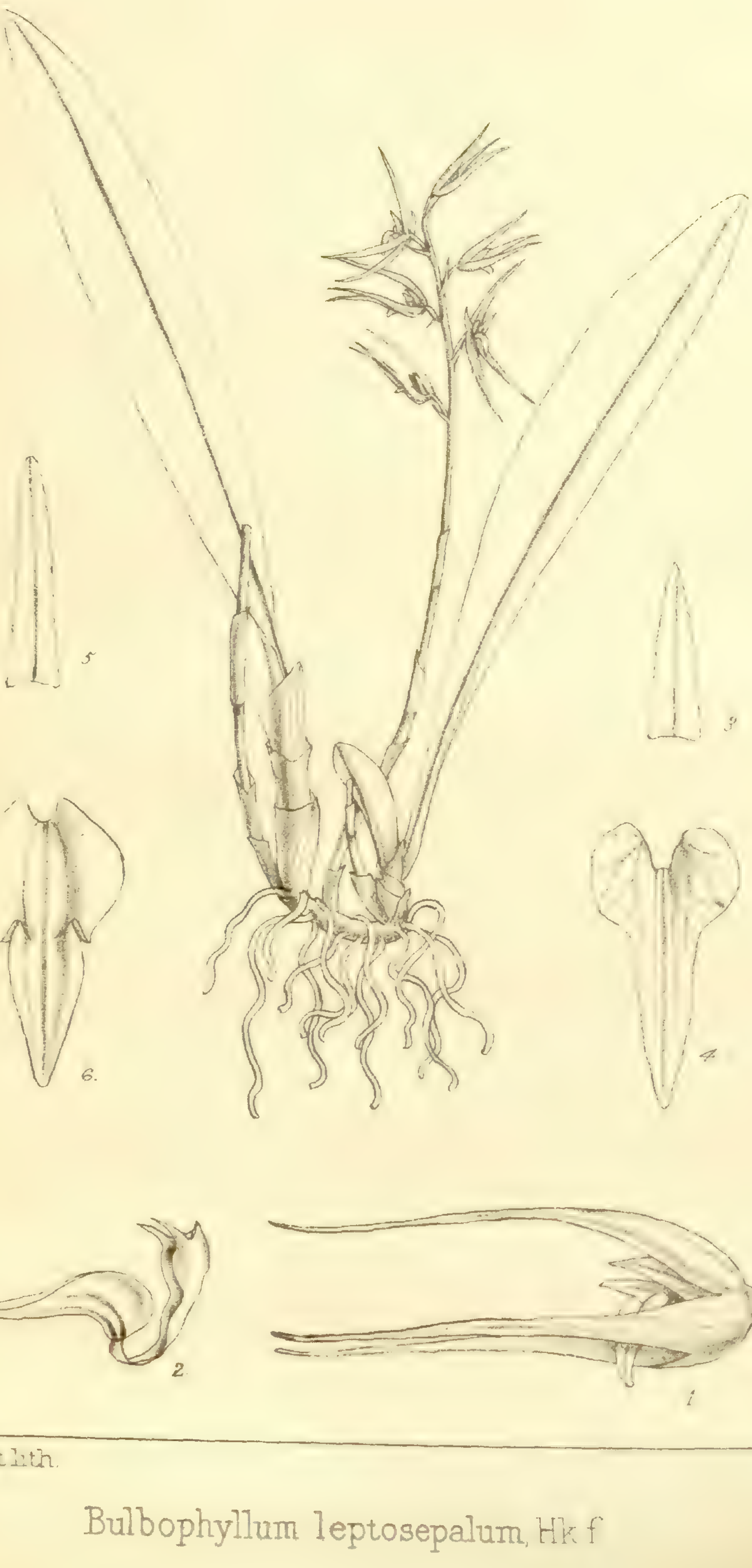
D. (Eubulbophyllum) Wrayii, *Hook. f. Fl. Brit. Ind.* v. 766; pseudobulbis nullis, foliis aliis sessilibus aliis longe petiolatis ellipticis v. lineari-oblongis, scapo valde elongato valido, vaginis distantibus laxis, floribus majusculis, sepalis lanceolatis dorsali erecto lateralibus apicem versus pedis columnæ insertis falcato-decurvis, petalis oblongis obtusis medio constrictis, labello stipitato recurvo obtuso basi late biauriculato apice bicuspidato.

Hab. Malay Peninsula; Perak, on Gonong Brumbar Pahang, alt. 8,000 feet, *Wray*.

Rhizoma robustum, lignosum, nudum, radicans. *Folia* 3–4 poll. longa, crassa, multinervia; petiolo 4-pollicari, vagina elongata tubulosa instructo. *Scapus* adscendens, pedalis, vaginis $\frac{3}{4}$–1 poll. longis superioribus brevibus acuminatis; bracteæ ovato-lanceolatæ pedicellis $\frac{1}{3}$ poll. longis multo breviores. *Flores* $\frac{2}{3}$ poll. lati, pallide virides, rubro-maculati; sepala 3-nervia; petala sepalis dimidio breviora, apice rotundata, obscure 3-nervia. *Labellum* lineari-oblongum, teretiusculum, apice rotundatum, auriculis rotundatis patulis. *Columna* majuscula, apice truncata, cuspidibus erectis; anthera apice acuminata.

The solitary specimen is not in a good flowering state. The tips of the leaves are wanting from the points indicated by the artist by dotted lines. I do not find so distinct an appendage to the tip of the anther as is figured at No. 6 of the plate, but that organ is narrowed to a triangular beak.—J. D. H.

Fig. 1. Side view of flower. 2. Petal. 3. Column and lip. 4. Back; and 5, side view of li . 6. Anther.



M.S.del et lith.

Bulbophyllum leptosepalum, Hk f

PLATE 2045.

BULBOPHYLLUM LEPTOSEPALUM, *Hook. f.*

ORCHIDEÆ. Subtribe DENDROBIEÆ.

B. (**Eubulbophyllum**) **leptosepalum**, *Hook. f. Fl. Brit. Ind.* v. 767; pseudobulbis obsoletis, foliis linearibus v. oblanceolatis subacutis, scapo gracili infra medium vaginis (inferioribus imbricatis) instructo, racemo paucifloro, bracteis pedicellos breves æquantibus, sepalis æqualibus angustissime lanceolatis, petalis multoties brevioribus lanceolatis acutis, labello membranaceo breviter stipitato ovato-lanceolato acuto 3-lobo, columna brevissima longiuscule bicalcarata.

HAB. Malay Peninsula; Penang, on Govt. Hill, *Curtis*; Perak, *Scortechini*; Malacca, *Maingay* (Kew distrib. 1674).

Rhizoma cæspitosum, rigidum, nudum, radicans. *Folia* conferta, 4–6 poll. longa, in petiolum brevem angustata, marginibus recurvis. *Scapus* foliis brevior; bracteæ lanceolatæ; racemus brevis v. longiusculus, laxiflorus. *Flores* subhorizontales, cellulares, albi; sepala ½ poll. longa, e basi ovata longissime acuminata, 3-nervia; petala 1-nervia. *Labellum* stipitatum, membranaceum, nervosum.

The form of the basal half of the lip seems variable: fig. 4 is from a drawing of my own from Scortechini's specimens; fig. 6 also from drawings of my own of the Penang one.—J. D. H.

Fig. 1. Flower. 2. Column and lip. 3 and 5. Petals. 4 and 6. Lips. *All enlarged.*

M.S. del. et lith.

Bulbophyllum hymenanthum, Hk. f

PLATE 2046.

BULBOPHYLLUM HYMENANTHUM, *Hook. f.*

ORCHIDEÆ. Subtribe DENDROBIEÆ.

B. (**Eubulbophyllum**) **hymenanthum**, *Hook. f. Fl. Brit. Ind.* v. 767; parvulum, pseudobulbis 0, foliis late ellipticis orbiculatisve ecostatis, scapo gracili foliis longiore vaginato 2-floro, bracteis lanceolatis, sepalis subæqualibus lanceolatis acuminatis, petalis linearibus linearioblongisve, labello stipitato oblongo obtuso vix recurvo, columnæ lateribus apice breviter obtuse productis.

HAB. Khasia Hills; at Myrung, alt. 5,000 feet, *J. D. H.* and *T. Thomson.*

Rhizoma gracile, nudum, ad nodos radicans. *Folia* $\frac{1}{3}$–$\frac{1}{2}$ poll. diam., brevissime petiolata, coriacea, enervia, apice rotundata. *Scapus* 1-pollicaris, 2–3-vaginatus; bracteæ pedicellos brevissimos æquantes. *Flores* $\frac{1}{2}$ poll. diam., flavidi; sepala hyalina, 3-nervia; petala sepalis triente breviora et multo angustiora, 1-nervia, hyalina. *Labellum* fere rectum, 3-nerve, basi cordatum, sinu parvo, apice rotundato.

A singular little species, of which with plenty of foliage only one or two flowering scapes were found. The flowers, owing to the great delicacy of their texture, were, after being dried, with difficulty laid out for analysis and figuring.—J. D. H.

Fig. 1. Flower. 2. Column, and side view of lip. 3. Front view of lip. *All enlarged.*

M.S. del et lith.

Bulbophyllum Globulus, Hk.f.

Plate 2047.

BULBOPHYLLUM GLOBULUS, *Hook. f.*

Orchideæ. Subtribe Dendrobieæ.

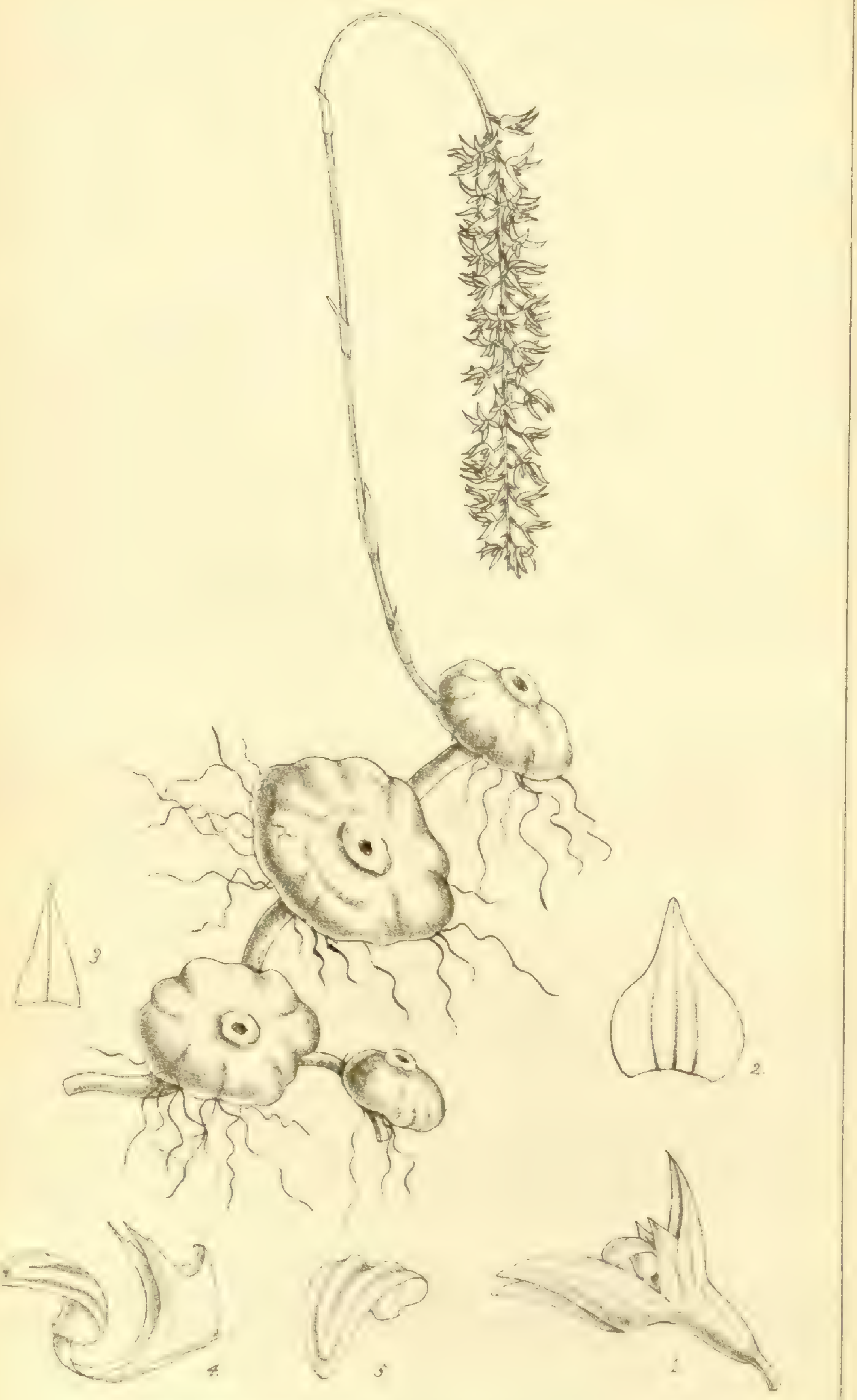
B. (**Eubulbophyllum**) **Globulus**, *Hook. f. Fl. Brit. Ind.* v. 767; rhizomate crasso, pseudobulbis parvis confertis globosis, foliis lineari-oblongis obtusis coriaceis costatis, scapo folio subæquilongo 2 3-vaginato, racemo erecto multifloro, bracteis minutis, floribus parvis, sepalis subæquilongis dorsali lineari-oblongo, lateralibus lanceolatis subacutis, petalis ovato-oblongis subacutis dimidio minoribus, labello minuto breviter stipitato recurvo acuminato, columna subtruncata.

Hab. **Malay Peninsula; Perak,** *Scortechini.*

Rhizoma crassitie fere pennæ olorinæ, ubique radicans. *Pseudobulbi* $\frac{1}{3}$ poll. diam., globosi v. late ovoidei. *Folia* 1 2 poll. longa, $\frac{1}{2}$–$\frac{2}{3}$ poll. lata, costata. *Scapus* rigidulus; vaginæ $\frac{1}{4}$ poll. longæ, remotæ; racemus ad 2-pollicaris, laxiflorus; bracteæ ovatæ, acutæ, pedicellos breves æquantes. *Flores* sub $\frac{1}{3}$ poll. diam.; sepala 3-nervia; petala 1-nervia. *Labellum* lanceolatum, valde recurvum.

Of this distinct little plant the specimens are very indifferent, in young fruit only, with a few detached withered flowers, which latter the artist has had great difficulty in figuring. The habit is, however, so peculiar, that I think there will be no difficulty in recognising the species.—J. D. H.

Fig. 1. Flower, of the *natural size.* 2. The same. 3. Lip. *Both enlarged.*



M.S. del. et lith.

Bulbophyllum micranthum, Hk.f.

Plate 2048.

BULBOPHYLLUM MICRANTHUM, *Hook. f.*

Orchideæ. Subtribe Dendrobieæ.

B. (**Eubulbophyllum**) **micranthum**, *Hook. f. Fl. Brit. Ind.* v. 768; pseudobulbis disciformibus crassis sublobatis, scapo gracili 4-vaginato apice decurvo, racemo pendulo multifloro, floribus parvulis, bracteis minimis, sepalo dorsali triangulari v. rhombeo-ovato acuminato, lateralibus paullo longioribus falcatis ovatis acutis, petalis parvis triangulari-ovatis acutis, labello stipitato recurvo, columna majuscula 2-calcarata.

Hab. Tenasserim; on granite rocks of Teongoo and Ta-ok, *Parish.*

Rhizoma crassitie pennæ anserinæ, nudum, ad pseudobulbos radicans, radicibus tenuibus. *Pseudobulbi* 1–1½ poll. diam., centro umbonato. *Folia* non visa. *Scapus* 4-pollicaris, vaginis remotis ¼ poll. longis; racemus 2-pollicaris, bracteis acutis, pedicellis brevissimis. *Flores* ⅙ poll. lati, purpurei; sepala 3-nervia; petala 1-nervia. *Labellum* linguiforme, obtusum, disco 2-carinato. *Columnæ* calcaria suberecta, dorso infra apicem unidentata.

Referred by Reichenbach (in Trans. Linn. Soc.) to *B. triste* of R. f. in Walp. Ann. vi. 253, and of which there is a specimen in Herb. Lindl. and an excellent figure by Parish in Herb. Kew. Though agreeing in the form of the pseudobulbs and pendulous raceme, this differs conspicuously from that plant in the minute flowers. It is singular that the leaves of both this and *B. triste* are unknown.—J. D. H.

Fig. 1. Flower. 2. Dorsal sepal. 3. Petal. 4. Column and lip. 5. Lip. *All enlarged.*

M S del et lith.

Bulbophyllum cirrhatum, Hk.f.

Plate 2049.

BULBOPHYLLUM CIRRHATUM, *Hook. f.*

Orchideæ. Subtribe Dendrobieæ.

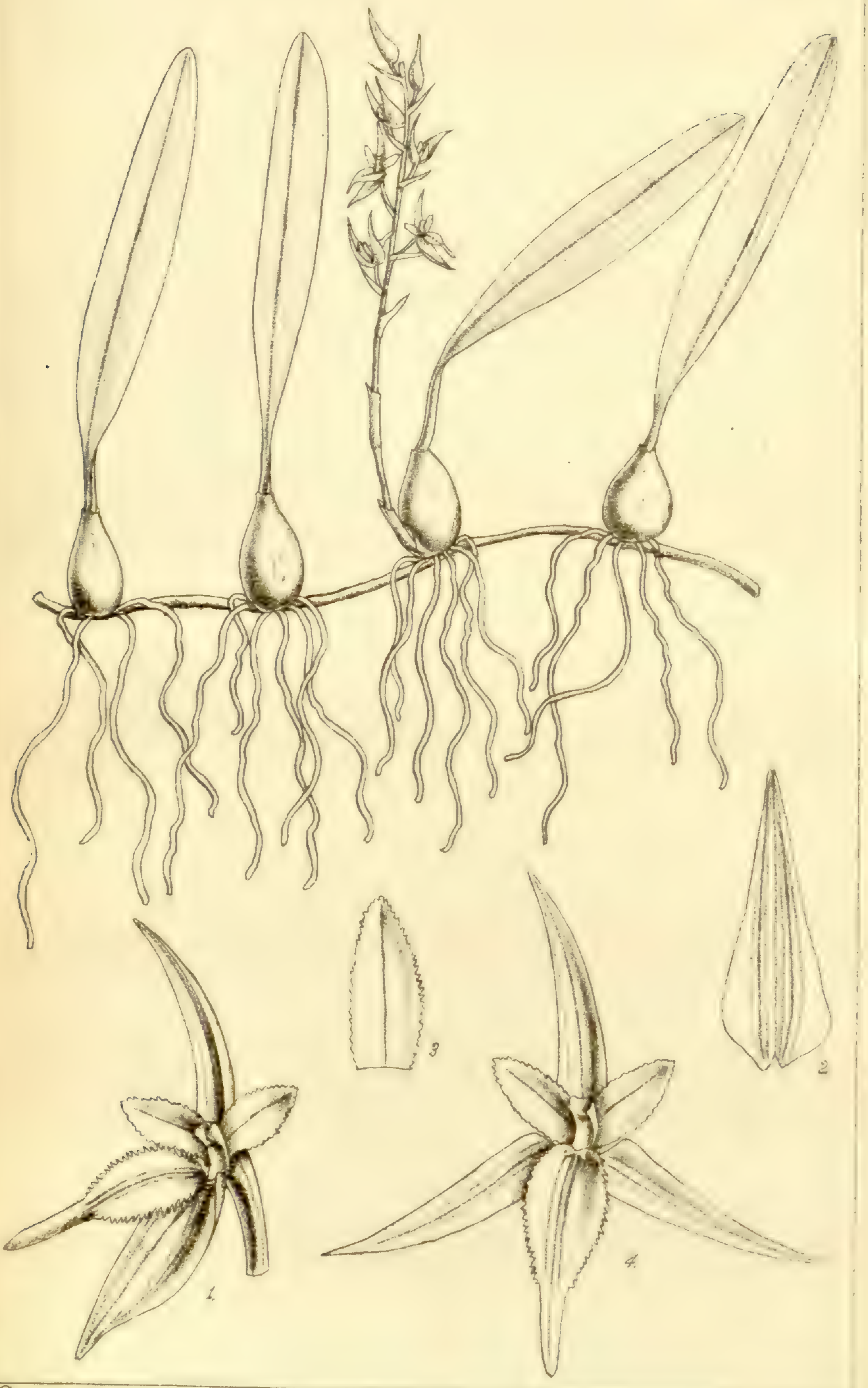
B. (**Ione**) **cirrhatum**, *Hook. f. Fl. Brit. Ind.* v. 769; pseudobulbis oblongis obpyriformibusve, foliis lineari-oblongis obtusis, scapo robusto folio longiore 3–4-vaginato, racemo erecto paucifloro, bracteis lineari-oblongis obtusis pedicellum longe superantibus, floribus majusculis, sepalo dorsali erecto ovato-oblongo, lateralibus connatis labello æquilongo suppositis, petalis suborbicularibus concavis, labello ovato-oblongo carinis infra medium 2 basin versus clavatis instructo.—Ione cirrhata, *Lindl. Fol. Orchid.* Ione 1 ; *Walp. Ann.* vi. 635.

Hab. Sikkim Himalaya, alt. 4,000 feet, *J. D. H.* (*ic. Cathcart*).

Rhizoma robustum, nudum, ad pseudobulbos radicans. *Pseudobulbi* 1–1½ poll. longi, teretes. *Folia* sessilia 4–6 poll. longa, vix in petiolum angustata, multinervia. *Scapus* basi ascendens, dein strictus, erectus, unacum racemo paucifloro 12-pollicaris, vaginis ¾–1 poll. longis auctus; bracteæ ½–⅔ poll. longæ, subacutæ, concavæ, pedicello unacum ovario subduplo longiores. *Flores* expansi 1 poll. longi, ⅓ poll. lati, sordide albi purpureo striati ; sepalum dorsale subacutum, 5-nerve, lateralia in labium cymbiforme 2-fidum connata ; petala 7-nervia, sepalis dimidio minora, patula. *Labellum* purpureum, pede brevi columnæ sessile, ovato-oblongum, obtusum, integerrimum, supra convexum. *Columna* crassa, apice bifida, cruribus porrectis acutis.—Descriptio ad icon. beati dom. Cathcarti, in Herbario Kewensi servatam.

Lindley in his 'Folia Orchidacea' describes three Himalayan species of *Ione* with tall stout scapes, of which two require reinvestigation. The three are *I. paleacea*, figured in Bot. Mag. t. 6344; *I. fusco-purpurea* (*Dipodium*, Griff. Notul. iii. 405) ; and the present plant, which differs from *B. paleaceum* in the obtuse bracts and shorter and narrower obtuse sepals.—J. D. H.

Fig 1. Flower. 2. Column and spur. *Both enlarged.*



M.S del.et lith

Bulbophyllum candidum, Hk.f.

Plate 2050.

BULBOPHYLLUM CANDIDUM, *Hook. f.*

Orchideæ. Subtribe Dendrobieæ.

B. (**Ione**) **candidum**, *Hook. f. Fl. Brit. Ind.* v. 770; rhizomate gracili, pseudobulbis ovoideis, foliis linearibus obtusis, scapo folium subæquante sub-2-vaginato, racemo erecto laxifloro, bracteis lanceolatis ovarium superantibus, sepalis æqualibus anguste lanceolatis acuminatis, lateralibus basi connatis, petalis sepalis dimidio brevioribus oblongis erosis, labello sepalis æquilongo sessili ovato serrulato ultra medium in pugionem teretiusculum repente contracto.—Ione candida, *Lindl. Fol. Orchid.*, Ione 3 ; *Walp. Rep.* vi. 637.

Hab. Khasia Hills, alt. 4,000–5,000 feet, *J. D. H.* and *Thomson*; Upper Assam, on the Naga Hills, *Prain*.

Rhizoma crassitie pennæ passerinæ, nudum, ad pseudobulbos radicans. *Pseudobulbi* $\frac{1}{2}$–$\frac{2}{3}$ poll. longi. *Folia* 2–4 poll. longa, vix in petiolum angustata, striata. *Scapus* gracilis, vaginis tubulosis auctus; racemus 1–1 $\frac{1}{2}$-pollicaris; bracteæ $\frac{1}{4}$ poll. longæ, membranaceæ. *Flores* $\frac{1}{3}$ poll. longi, albi; sepala 3-nervia, lateralia primum cohærentia, demum libera patentia; petala 1-nervia. *Labellum* flavum, 3-nerve, dimidio basali membranaceo. *Columna* brevis, truncata.

Closely allied to *B. bicolor* in habit and appearance, which is found in the same hills, but at rather a higher elevation, and distinguished from it by its rather smaller size, white sepals and the yellow lip which is not panduriform nor purple.—J. D. H.

Fig. 1. Flower. 2. Lateral sepals while still cohering. 3. Petals. *All enlarged.*

VOL. XI.—PART III.] [JUNE.

HOOKER'S

ICONES PLANTARUM;

OR,

FIGURES, WITH DESCRIPTIVE CHARACTERS AND REMARKS,

OF NEW AND RARE PLANTS,

SELECTED FROM THE

KEW HERBARIUM.

THIRD SERIES.

EDITED FOR THE BENTHAM TRUSTEES BY

DANIEL OLIVER, F.R.S., F.L.S.

EMERITUS PROFESSOR OF BOTANY IN UNIVERSITY COLLEGE, LONDON; LATE KEEPER OF THE HERBARIUM AND LIBRARY, ROYAL BOTANIC GARDENS, KEW.

Under the Authority of the Director of the Royal Botanic Gardens, Kew.

VOL. XI.

OR VOL. XXI. OF THE ENTIRE WORK

This Volume (XI.) is devoted to Indian Orchidaceæ.

Volume X. is in progress at the same time.

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Henosis longipes, Hk.f.

Plate 2051.

HENOSIS LONGIPES, *Hook. f.*

Orchideæ. Subtribe Dendrobieæ.

Henosis, char. reform.

Sepala subæquilonga, dorsale ovato-lanceolatum, basi truncatum; lateralia apicem versus pedis elongati nudi columnæ inserta, oblongo-lanceolata, recurva. *Petala* brevissima, triangularia, tenuissima, in membranam basin et pedem columnæ marginantem decurrentia. *Labellum* sepalis æquilongum, lanceolatum, rectum, planum, supra villosum. *Columna* maxima, bialata, alis in processus erectos productis; anthera minuta, globosa, sinu inter lobos gracile stipitata; pollinia 4, lineari-oblonga, per paria cohærentia.—Herba *repens*, *rhizomate valido*, *repente*, *nudo*, *ad pseudobulbos radicante*, *surculis vaginatis*. Pseudobulbi *ovoidei*, *unifoliati*, *nudi*. Folium *elliptico-lanceolatum*. Scapus *erectus gracillimus*, *basin versus vaginatus*. Racemus *erectus*, *laxiflorus*; bracteæ *minutæ*, *acutæ*; *pedicelli valde elongati*, *filiformes*, *erecto-patentes*. Flores *mediocres*.

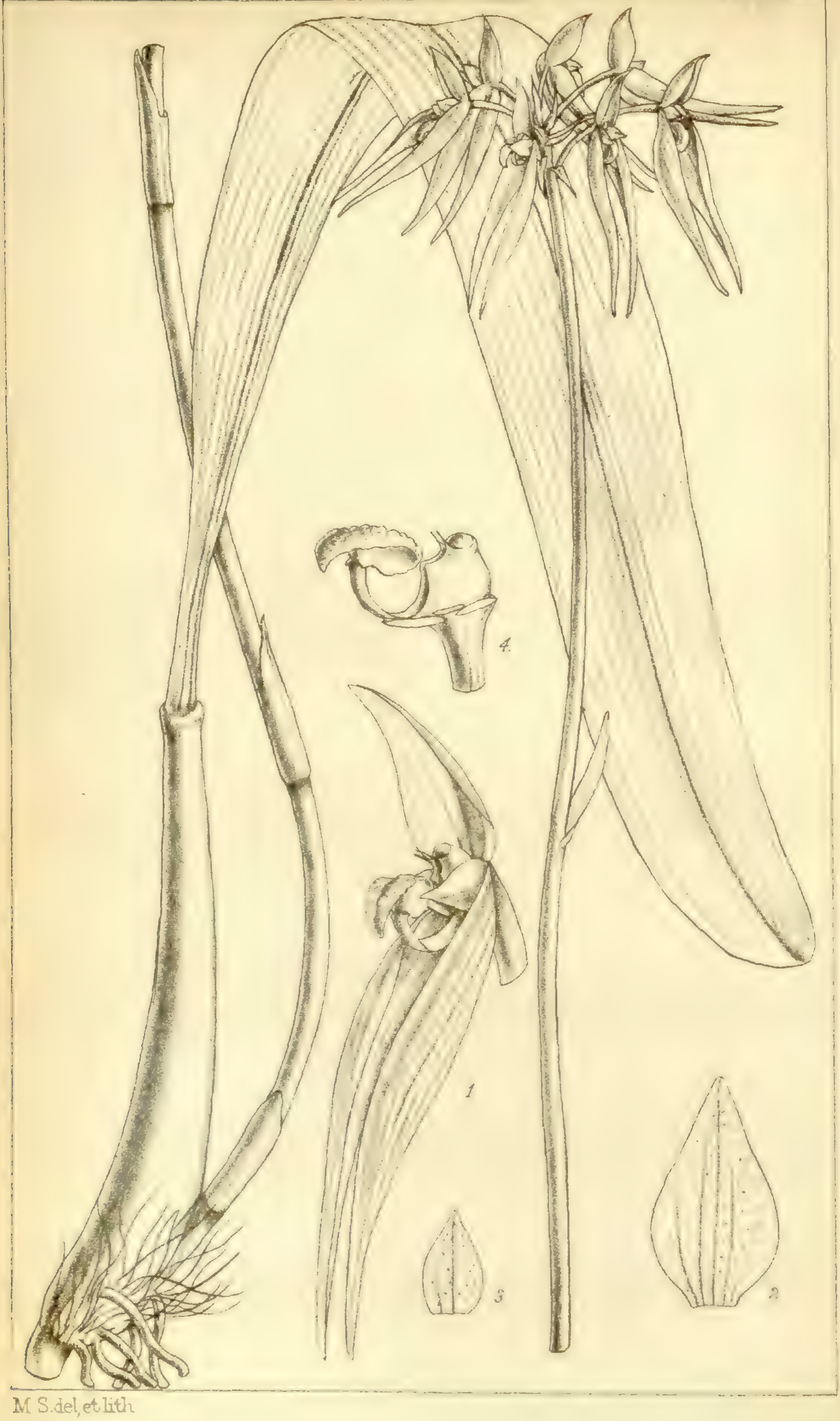
H. longipes, *Hook. f. Fl. Brit. Ind.* v. 771; vi. 189. Bulbophyllum longipes, *Reichb. f. in Walp. Ann.* vi. 253.

Hab. Tenasserim; at Moulmein, alt. 4,000–5,000 feet, *Lobb* (*in Herb. Lindl.*).

Rhizoma crassitie pennæ anatinæ v. anserinæ. Pseudobulbi $\frac{3}{4}$–1 poll. longi, læves. *Folium* 3–4-pollicare, subacutum, valde coriaceum. *Scapus* unacum racemo 9-pollicaris; floribus 10–12, remotis vaginæ tubulosæ appressæ; bracteæ $\frac{1}{6}$ poll. longæ; pedicelli cum ovario 1–$1\frac{1}{2}$-pollicares. *Flores* horizontales; sepala $\frac{1}{2}$ poll longa, obscure 5-nervia, dorsale suberectum, subacutum, lateralia paullo longiora, obtusa. *Columna* sepalis triente brevior, membranacea, utrinque uninervis.

In the Supplement to the '*Orchideæ* of British India' I have (vol. vi. p. 189) corrected the blunder which I had made in the description of this genus (vol. v. p. 771) from overlooking the very obscure true petals of this plant, and mistaking for them the broad nerved wings of the remarkable column. As there stated, I am indebted to my artist, Miss Smith, for pointing these out to me. They are not, as described by Reichenbach, triangular-ligulate, but each forms an extremely short transparent membrane, not a fourth of the length of the column, to the broad base of which they are adnate, and along whose foot they are decurrent.—J. D. H.

Fig. 1. Flower. 2. Column and lip. 3. Lip. 4. Column, spread open, with the minute anther in position. 5. Anther. 6. Pollinia. *All enlarged.*



M S.del, et lith

Cirrhopetalum elatum, Hk. f.

Plate 2052.

CIRRHOPETALUM ELATUM, *Hook. f.*

Orchideæ. Subtribe Dendrobieæ.

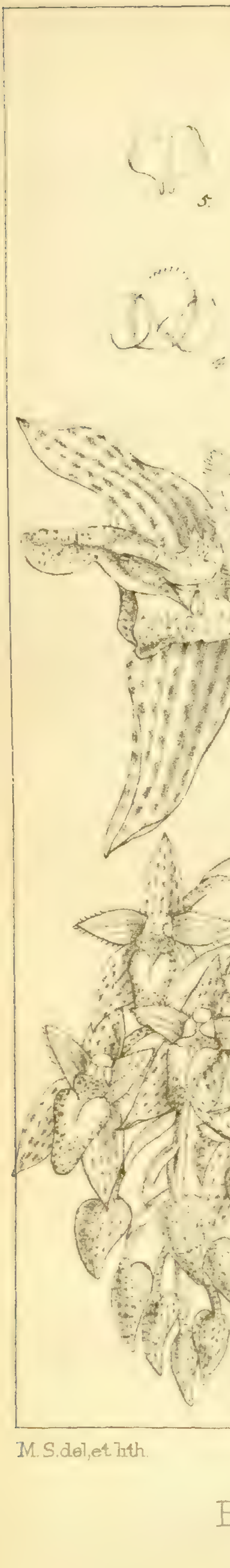
C. (Umbellatæ) elatum, *Hook. f. Fl. Brit. Ind.* v. 775; pseudobulbis elongatis teretibus, folio lineari-oblongo v. oblanceolato obtuso, scapo valido elongato 3–4-vaginato, umbella multiflora, bracteis pedicellis æquilongis v. brevioribus, floribus majusculis, sepalo dorsali ovato, lateralibus 3–4-plo longioribus lineari-lanceolatis acuminatis concavis, petalis late ovatis, labello longe stipitato recurvo carunculato, columna breviter 2-setosa.

Hab. Sikkim Himalaya; alt. 5,000 feet, *Gamble, Clarke.*

Rhizoma validum, crassitie pennæ anserinæ, nudum, ad pseudobulbos radicans. *Pseudobulbi* 2–4 poll. longi, columnares, v. sensim a basi ad apicem attenuati, teretes, basi vestigiis fibrosis vaginarum instructi. Folium 8–10-pollicare, in petiolum robustum attenuatum. *Scapus* 10–14-pollicaris, purpureo-punctatus; vaginæ laxæ; bracteæ lanceolatæ, membranaceæ, $\frac{1}{4}$–$\frac{1}{2}$ poll. longæ. *Flores* $1\frac{1}{4}$ poll. longi, sordide flavi, purpureo-punctati; sepala obscure 5–7-nervia, concava, lateralia libera. *Labellum* ovato-lanceolatum, obtusum. *Columna* brevis, crassa, truncata, setis apicalibus minutis.

Closely allied to *C. picturatum*, of Tenasserim, but the dorsal sepal has no awn, the petals are not erose, the flowers are not purple, and the setæ of the column are very minute.—J. D. H.

Fig. 1. Flower. 2. Dorsal sepal. 3. Petal. 4. Column and lip. *All enlarged.*



M. S. del, et lith.

Bulbophyllum Kingii, Hk. f.

Plate 2053.

BULBOPHYLLUM KINGII, *Hook. f.*

Orchideæ. Subtribe Dendrobieæ.

B. (**Racemosæ**) **Kingii**, *Hook. f. Fl. Brit. Ind.* v. 760; pseudobulbis ovoideo-globosis 4-lobis, folio petiolato lineari-oblongo obtuso, scapo brevi pendulo robusto basi laxe vaginato, racemo densifloro, sepalis glabris dorsali ovato acuto, lateralibus paullo majoribus ovato-lanceolatis acutis, petalis sepalum dorsale subæquantibus ovatis acutis ciliatis, labello majusculo stipitato ovato-cordato obtuso crasso fere recto auriculis majusculis dentatis.

Hab. Sikkim Himalaya, alt. 6,000 feet, *King* (*Ic. in Herb. Hort' Calcutt.*).

Rhizoma crassum. *Pseudobulbi* conferti, 1–1½ poll. diam., virides, læves, demum fusci. *Folium* unacum petiolo 6–8-pollicare, rigidum, erectum. *Scapus* strictus; vaginæ basilares imbricatæ, breves, inflatæ, unacum rachi racemi alabastroque virides rubro-punctatæ; bracteæ ½–¾ poll. longæ, oblongo-lanceolatæ, concavæ, flavæ, pedicellis paullo breviores. *Flores* ⅓–½ poll. diam.; sepala pallide viridia, striatim punctulata; petala pallida, pilis rubris ciliata; labellum luride viride, lateribus punctatis; columna brevis, crassa, lateribus obtusis.

A remarkable and beautiful species with an auricled lip as in *B. cupreum*, *Careyanum*, &c., but quite unlike any congener. The figure and description are made from a beautiful drawing belonging to the Calcutta Botanical Gardens, and lent by Dr. King; which, however, may have the common fault of native artists in enlarging its subject. I have seen no specimen.—J. D. H.

Fig. 1. Flower. 2. Lip. 3. Column. 4. Pollinia with (I suppose) the anther behind. 5. Pollinia. *All much enlarged.*

M.S. del,et lith.

Bulbophyllum patens, King.

PLATE 2054.

BULBOPHYLLUM PATENS, *King*.

ORCHIDEÆ. Subtribe DENDROBIEÆ.

B. (**Unifloræ**) **patens**, *King in Hook. f. Fl. Brit. Ind.* vi. 187 ; pseudobulbis ellipsoideis, folio oblongo obtuso in petiolum brevem angustato, scapo brevi crasso, sepalis petalisque falcatis lineari-lanceolatis patentibus, lateralibus dorsali majoribus, petalis sepalum dorsale subæquantibus, labello parvo stipitato lineari-oblongo medio paullo constricto plano recto obtuso.

HAB. Perak, *Kunstler* (*Ic. in Herb. Hort. Calcutt.*).

Rhizoma elongatum, crassitie pennæ anserinæ, articulatum, radicibus creberrimis brevibus, articulis longe setosis. *Pseudobulbi* 1-1½ poll longi, læves, demum sulcati. Folium unacum petiolo brevi 6 poll. longum, 2 poll. latum, acutum. *Scapi* (v. pedicelli) ad basin pseudobulbi, v. dissiti, ¼–2 poll. longi, flavidi rubro-purpureo maculati, basin versus bracteis brevibus imbricatis vaginati. *Flores* 1–1½ poll. lati ; sepala et petala rubro-purpureo suffusa et maculata, marginibus pallidis ; labellum pallide fusco-rubrum ; columna brevis, truncata, mutica.

A near ally of *B. macranthum*, but with much smaller flowers, and a very different lip which is perfectly straight. The figure of the whole plant is made from drawings lent by Dr. King; in these it appears that the scapes arise sometimes from the base of the pseudobulb, at others from the rhizome at a distance from it. I have also examined dried flowers.—J. D. H.

Fig. 1. Flower. 2. Lip. 3. Pollinia. *All enlarged.*

M.S. del et lith.

Cirrhopetalum Andersoni Hk f

Plate 2055.

CIRRHOPETALUM ANDERSONI, *Hook. f.*

Orchideæ. Subtribe Dendrobieæ.

C. (Umbellatæ) Andersoni, *Hook. f. Fl. Brit. Ind.* v. 777; rhizomate elongato nudo, pseudobulbis elongato-obovoideis oblongisve, folio lineari-oblongo subacuto, scapo elongato suberecto superne 2-vaginato, umbella sub-6-flora, bracteis setaceis pedicellos breves subæquantibus, floribus $\frac{2}{3}$ poll. longis roseis punctulatis, sepalo dorsali ovato incurvo lateralibus cohærentibus dimidiato-obovatis spathulatisve apiculatis multoties breviore, petalis ovato-oblongis sepalo dorsali dimidio brevioribus, labello minuto obtuso, columna mutica.

Hab. Sikkim Himalaya; near Darjeeling, alt. 7,000 feet, *T. Anderson.*

Rhizoma crassitie pennæ anatinæ, flexuosum. *Pseudobulbi* remoti, $1\frac{1}{4}$–$1\frac{3}{4}$ poll. longi, læves, teretes, virides, evaginati. *Scapus* 5-pollicaris, subflexuosus, viridis, rubro-punctatus, ima basi vaginis acutis imbricatis tectus, vaginis 2 superioribus remotis $\frac{1}{2}$ poll. longis linearibus. *Umbella* ad 2 poll. lata; bracteæ $\frac{1}{3}$ poll. longæ; pedicelli crassiusculi, roseo-punctati. *Flores* $\frac{1}{3}$ poll. lati, pallidi, roseo suffusi et punctati; sepalum dorsale incurvum, concavum, vix $\frac{1}{4}$ poll. longum; lateralia leviter cohærentia.

A beautiful plant, described from a drawing made at Darjeeling under the late Dr. Anderson's directions by Lutchman Singh, and lent me by Dr. King.—J. D. H.

Fig. 1 and 2. Flowers. *Both enlarged.*

M. S. del, et lith

Cirrhopetalum brevipes, Hk f.

PLATE 2056.

CIRRHOPETALUM BREVIPES, *Hook. f.*

ORCHIDEÆ. Subtribe DENDROBIEÆ.

C. (**Umbellatæ**) **brevipes**, *Hook. f. Fl. Brit. Ind.* v. 777; rhizomate elongato ramoso nudo, pseudobulbis remotis ovoideo-oblongis teretibus maturis nudis, folio sessile elliptico-oblongo acuto, scapo pseudobulbo suo breviore vaginato, umbella 4 6-flora, floribus breviter pedicellatis 1 poll. longis roseis, sepalo dorsali late ovato acuto concavo lateralibus lineari-lanceolatis acuminatis discretis multoties breviore, petalis late ovatis.

HAB. Sikkim Himalaya; between Yoksun and Jongri, about 8,000 feet, *T. Anderson*, Oct. 1862 (*Ic. in Herb. Hort. Calcutt.*).

Rhizoma ut videtur scandens, crassitie pennæ corvinæ, læve, nudum, hinc illinc radicans. *Pseudobulbi* 1–1½ poll. longi, læves, virides, brunneo suffusi. *Folium* 3-pollicare. Scapus ⅓–⅔ poll. longus, vaginis lanceolatis acutis erectis tectus. *Umbella* 2 poll. lata; pedicelli ¼ poll. longi, virides; bracteæ subulatæ.

A remarkable species, the long branched rhizome being scandent, probably several feet long, and bearing distant erect pseudobulbs, the terminal of which alone bears a flowering scape at its base. The umbel is flat-topped, the flowers radiating horizontally in a circle. The figures and description are from a drawing made in the interior of Sikkim, at the base of Kinghin-junga, by Lutchman Singh, under the late Dr. Anderson's supervision, and lent to me by Dr. King.—J. D. H.

A. Cirrhopetalum Roxburghii Lindl
B _____ aureum Hk. f

Plate 2057.

A.—CIRRHOPETALUM ROXBURGHII, *Lindl.*
B.—CIRRHOPETALUM AUREUM, *Hook. f.*

Orchideæ. Subtribe Dendrobieæ.

A.—**C.** (**Umbellatæ**) **Roxburghii**, *Lindl. Gen. et Sp. Orchid.* 58; in *Bot. Reg. sub* t. 49; pseudobulbis globosis, folio sessili lineari-oblongo, scapo folio duplo longiore gracili erecto 3–4-vaginato, umbella multiflora, floribus flavidis $\frac{1}{2}$ poll. longis breviter pedicellatis, sepalo dorsali late ovato aristato ciliato lateralibus oblique lineari-oblongis obtusis discretis multo breviore, petalis sepalo dorsali consimilibus, labello subsessili recurvo, columna mutica. *Fl. Brit. Ind.* v. 774. Bulbophyllum Roxburghii, *Reichb. f. in Walp. Ann.* vi. 263. Aerides radiatum, *Roxb. Fl. Ind.* iii. 476.

Hab. On trees in the Gangetic Delta. *Carey* (*ic. in Herb. Hort. Kew.*).

Rhizoma gracile. *Pseudobulbi* solitarii, $\frac{1}{2}$ poll. diam., demum rugosi. Folium 2-pollicare. *Scapus* 5-pollicaris, viridis; vaginæ lanceolatæ, acuminatæ. *Umbella* $1\frac{3}{4}$ poll. diam., bracteæ setaceæ, pedicellique $\frac{1}{8}$ poll. longi; sepalum dorsale et petala flava rubro striata et ciliata; sepala lateralia aurea; labellum linguiforme, rubrum, arcte recurvum.

The figure is a copy of Roxburgh's drawing (preserved in the Kew Herbarium) of his *Aerides radiatum*, a plant which is probably common in the Sunderbunds, but of which I have seen no specimen. Its nearest ally is *B. gamosepalum*, Griff. (*B. Griffithianum*, Par. et Reichb. f.), which has very different pseudobulbs, larger flowers, and acute lateral sepals. This latter species I hope (with Dr. King's permission) to figure in a volume of the 'Annals of the Calcutta Botanical Gardens' which will be devoted to copies of the original drawings of Orchids which are preserved in the Herbarium of the Calcutta Botanical Gardens.—J. D. H.

Fig. 1. Flower, with the dorsal, and one lateral sepal, and one petal removed. 2. Lateral sepal and petal. 3. Dorsal sepals. *All enlarged.*

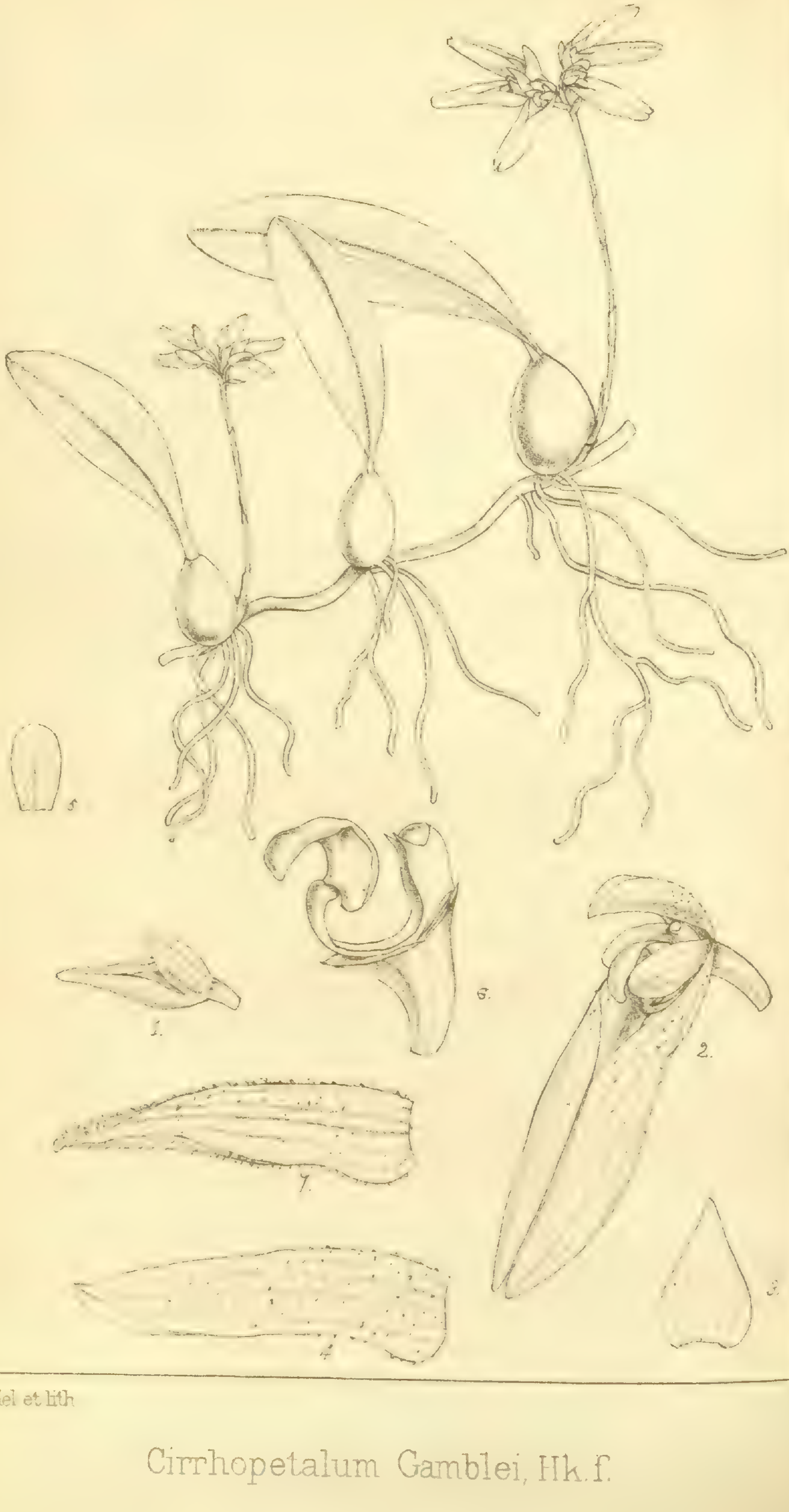
B.—**C. (Umbellatæ) aureum**, *Hook. f. Fl. Brit. Ind.* v. 777 ; rhizomate gracili nudo, pseudobulbis remotis obturbinatis, folio lineari-oblongo, scapo gracili folio breviore 2-floro, pedicellis elongatis, floribus erectis aureis pellicaribus, sepalo dorsali suborbiculari lateralibus ovato-oblongis subacutis incurvis ter breviore, petalis sepalo dorsali fere æquilongis oblongis apice rotundatis, labello stipitato ovato subpandurato obtuso recurvo, columna brevi bibrachiata et bicuspidata.

Hab. Nilghiri Hills ; in the Wynaad, *Jerdon* (*ic. in Herb. Hort. Kew.*).

Rhizoma crassitie pennæ passerinæ. *Pseudobulbi* $\frac{2}{3}$ poll. longi, rugosi. *Folium* 2-pollicare. *Scapus* filiformis, vagina angusta acuminata. *Flores* omnino aurei ; pedicelli unacum ovario $\frac{1}{2}$—$\frac{2}{3}$ poll. longi ; bracteæ parvæ, setaceæ.

The accompanying figure is taken from a drawing by the late Mr. Jerdon of Madras, a gentleman who made a very large collection of drawings of Indian Orchids, which were, on his death, purchased for the Kew Herbarium (in 1873). I know of no species at all like it. The dissections are very rude, and beyond the given name and habitat of 'Cirrhopetalum, Wynaad' it is unaccompanied with notes. It must be a beautiful plant.—J. D. H.

Fig. 1. Flower, viewed in front. 2. Dorsal sepal. 3. Lateral sepal. 4. Petal. 5. Lip. *All enlarged.*



M S. del et lith

Cirrhopetalum Gamblei, Hk. f.

Plate 2058.

CIRRHOPETALUM GAMBLEI, *Hook. f.*

Orchideæ. Subtribe Dendrobieæ.

C. (Umbellatæ) Gamblei, *Hook. f. Fl. Brit. Ind.* v. 778 ; parvulum, rhizomate nudo, pseudobulbis remotis ovoideo-globosis lævibus nudis, folio sessili oblongo obtuso, scapo gracili folio subæquilongo, vaginis 2–3 appressis, umbella subsexflora, floribus $\frac{1}{2}$ poll. longis breviter pedicellatis sparse glandulosis flavidis rubro punctatis et lineatis, sepalo dorsali ovato obtuso lateralibus linearibus planis obtusis cohærentibus ter breviore, petalis oblongis apicibus rotundatis, labello stipitato ovato-cordato recurvo, columna 2-mucronata.

Hab. Nilghiri Hills ; at Conoor, alt. 6,000 feet, *Gamble*. Baba-boodan Hills, *Law*.

Rhizoma crassitie pennæ corvinæ. *Pseudobulbi* $\frac{1}{2}$–$\frac{3}{4}$ poll. longi. *Folium* $1\frac{1}{2}$–2-pollicare. *Scapus* 2-pollicaris, vaginæ tubulosæ. *Umbella* 1 poll. lata ; bracteæ pedicellis brevibus æquilongæ.

There is in the Kew collection of Orchideous drawings one by the late Mr. Jerdon, of a plant from the Khondah Ghat (on the western wall of the Nilghiri plateau, alt. 8,000 feet), which resembles this in all respects but the much longer pedicels.—J. D. H.

Fig. 1. Bud. 2. Flower. 3. Dorsal sepal. 4. Lateral sepals. 5. Petal. 6. Column and lip.

M.S.del, et lith.

Cirrhopetalum Thomsoni, Hk.f.

Plate 2059.

CIRRHOPETALUM THOMSONI, *Hook. f.*

Orchideæ. Subtribe Dendrobieæ.

C. (Umbellatæ) Thomsoni, *Hook. f. Fl. Brit. Ind.* v. 778; parvulum, rhizomate robusto tortuoso, pseudobulbis ovoideis vaginatis, folio lineari-oblongo obtuso in petiolum angustato, scapo filiformi folio æquilongo v. longiore, vaginis 2–3 appressis, umbella pauciflora, floribus $\frac{1}{2}$ poll. longis breviter pedicellatis sub-papillosis, sepalo dorsali ovato purpureo lateralibus falcato-lanceolato acutis flavis basi purpureis ter breviore, petalis oblongis purpureis apicibus rotundatis, **labello ovato obtuso recurvo, columna mutica.**

Hab. Nilghiri Hills, alt. 6,000–7,000 feet, *Wight*, *G. Thomson*, *C. B. Clarke*.

When describing the plants of this difficult genus for the 'Flora of British India,' I regarded this and *B. Gamblei* as specifically different, but a re-examination of them for figuring in this work has led me to doubt their distinctness. The chief differences are, the longer petioled leaves of *Thomsoni*, its fewer differently coloured flowers, and the absence of mucros on the column. It is possible, indeed, that both may be referable to forms of Wight's *C. nilgherrense* (Ic. t. 1654), and all to *C. acutiflorum*, A. Rich. Living specimens or careful drawings can alone be relied on for specific characters of the minuter species of *Cirrhopetalum* and *Bulbophyllum*, the organs of which are so distorted after pressure as to be difficult of restoration by maceration.—J. D. H.

Fig 1. Flower, from specimen in Herb. Wight. 2. Dorsal sepal. 3. Lateral sepal. 4. Petal. 5. Column and lip. 6. Flower (from flower in Herb. Lindl.) *All enlarged.*

M S. del. et lith.

A. Cirrhopetalum parvulum, Hk.f.
B. _____ concinnum, Hk.f.

Plate 2060.

A.—CIRRHOPETALUM PARVULUM.
B.—CIRRHOPETALUM CONCINNUM.

Orchideæ. Subtribe Dendrobieæ.

A.—**C.** (**Subumbellatæ**) **parvulum**, *Hook. f. Fl. Brit. Ind.* v. 778; rhizomate tortuoso, pseudobulbis parvis ovoideis, folio sessili lineari-oblongo obtuso, scapo gracili folio æquilongo v. longiore nudo 3-floro, floribus ½ poll. longis in racemum perbrevem dispositis, bracteis pedicello æquilongis, sepalo dorsali ovato-oblongo obtuso lateralibus anguste lanceolatis acuminatis discretis ter quaterve breviore, petalis elliptico-ovatis obtusis, labello stipitato lanceolato recurvo, columna biaristata.

Hab. Sikkim Himalaya; at Darjeeling, *Griffith's Collectors.*

Rhizoma crassiusculum. *Pseudobulbi* ½ poll. longi. *Folium* 1–1½ poll. longum, sessile v. in petiolum brevem angustatum. *Scapus* basi vaginatus; bracteæ ¼ poll. longæ. *Capsula* ½–⅔ poll. longa, fusiformi-ellipsoidea, teres, pedicellata.

A very inconspicuous species, of which I have seen no specimens but Griffith's, which were procured by collectors sent by that botanist to Sikkim when he had charge of the Botanical Garden of Calcutta, in 1843. There is no species with which it can be confounded.—J. D. H.

Fig. 1. Flower. *Enlarged.*

B.—**C.** (**Umbellatæ**) **concinnum**, *Hook. f. Fl. Brit. Ind.* vi. 190; pusillum, rhizomate gracili, pseudobulbis parvis conico-ovoideis ampullaceis curvis, folio lineari-oblongo obtuso, scapo folio breviore filiformi, umbella pauciflora, floribus brevissime pedicellatis ½ poll. longis, sepalo dorsali ovato aristato ciliato lateralibus lineari-oblongis acutis planis cohærentibus dimidio breviore, petalis sepalo dorsali æquilongis et paullo angustioribus, labello subsessili recurvo, columna 2-apiculata.

Hab. Singapore; *Ridley.*

Rhizoma tortuosum. *Pseudobulbi* conferti, $\frac{1}{3}$–$\frac{1}{2}$ poll. longi. *Folium* 1–2 poll. longum. *Scapus* ascendens; vaginæ 1–2, minutæ, acutæ. *Umbella* 4–5-flora.

A near ally of *C. Roxburghii* (Plate 2057A), differing in the slender rhizome, narrow pseudobulbs, short scape, few-flowered umbels, smaller flowers with narrower dorsal sepals and petals, and shorter acute lateral sepals.—J. D. H.

Fig. 1. Flower. 2. Lip. 3. Column. *All enlarged.*

M. S. del. et lith.

Cirrhopetalum viridiflorum, Hk f

Plate 2061.

CIRRHOPETALUM VIRIDIFLORUM, *Hook. f.*

Orchideæ. Subtribe Dendrobieæ.

C. (**Racemosæ**) **viridiflorum**, *Hook. f. Fl. Brit. Ind.* v. 779; pseudobulbis ovoideis, foliis 1–2 sessilibus oblongis v. oblongo-lanceolatis, scapo foliis æquilongo v. longiore erecto 3–4-vaginato, racemo inclinato multifloro, bracteis ovato-lanceolatis, floribus $\frac{2}{3}$ poll. longis breviter pedicellatis suberectis imbricatis flavo-viridibus, sepalo dorsali ovato-oblongo obtuso depresso, lateralibus in laminam ovato-oblongam emarginatam dorsali vix duplo longiorem connatis, petalis rotundatis, labello subsessili oblongo obtuso, columna brevi crassa 2-brachiata brachiis erectis mucronatis.

Hab. Sikkim Himalaya, alt. 6,000–7,000 feet, *Clarke*, *Treutler*, *Gamble*. Khasia Hills; at Shillong, alt. 5,500 feet, *C. B. Clarke*.

Pseudobulbi $\frac{2}{3}$–1 poll. longi, læves, nudi. *Folia* 3–4 poll. longa, acuta v. obtusa, non coriacea, subflaccida. *Scapi* solitarii v. bini ad basin pseudobulbi, flexuosi; vaginæ $\frac{1}{4}$–$\frac{1}{2}$ poll. longæ; racemus $1\frac{1}{2}$–3 poll. longus, 6–20-florus; bracteæ pedicellis longiores, acuminatæ, membranaceæ, brunneæ. *Flores* imbricati, bilabiati; sepala membranacea, multinervia; petala 1-nervia, columna vix longiora; labellum minutum, carnosulum medio subconstrictum, basi 2-lobum, læve, ultra medium rugulosum ungue brevi lata. *Columnæ* brachiis gibbis in mucrones repente constrictis.

A remarkable species, nearly allied to *C. retrofractum* in the often 2-leaved pseudobulbs, the sott texture of the leaves, the inclined raceme, which is often abruptly declinate from the top of the scape, and especially in the brown membranous bracts. The flowers are broad, oblong in contour, and, as it were, 2-lipped. I find no rhizome in any of the specimens; and in the representations of the species which are contained in the rich Calcutta series of Orchids the pseudobulbs are figured as apparently clustered. The comparative length of the dorsal sepal would assign the plant to *Bulbophyllum*, but its affinity is with *Cirrhopetalum refractum*, and with no other of either genus.—J. D. H.

Fig. 1. Flower, with the sepals spread apart. 2. Petal. 3. Column and lip. 4. Lip. 5. Front view of column and anther. *All enlarged.*

Chrysoglossum erraticum, Hk.f.

PLATE 2062.

CHRYSOGLOSSUM ERRATICUM, *Hook. f.*

ORCHIDEÆ. Subtribe DENDROBIEÆ.

C. erraticum, *Hook. f. Fl. Brit. Ind.* v. 784; glaberrimum, folio longe petiolato lanceolato acuminato 7-nervi, scapo elato gracili, racemo laxe multifloro, floribus 1 poll. diam. longe gracile pedicellatis, sepalis petalisque oblongo-lanceolatis obtusis falcatis, mento parvo rotundato, labello basi 2-auriculato lobis lateralibus patenti-recurvis obtusis, terminali parvo orbiculari, disco 3-lamellato lamellis lateralibus lobo terminali evanescentibus intermedio lateralibus multo breviore.

HAB. Sikkim Himalaya; at Rishep, alt. 4,000 feet, *Clarke*.

Rhizoma crassum, carnosum, repens, folia scaposque remotos alternatim emittens. *Folium* pedale, in petiolum 4 poll. longum attenuatum, plicatum; petiolo in pseudobulbum angustum pollicarem inserto. *Scapus* $1\frac{1}{2}$-pedalis, basin versus vaginatus. *Racemus* 8-pollicaris; rachis gracilis, 15-florus; pedicelli cum ovariis $1\frac{1}{2}$ poll. longi, patentes; bracteæ lanceolatæ, membranaceæ, inferiores $\frac{1}{2}$ poll. longæ. *Sepala* et *petala* consimilia, viridia; labellum album, punctis 2 rubris versus basin loborum; columna gracilis, utrinque medio dilatata; anthera subhemisphærica; pollinia 2, subquadrata.

The most western member of a Malayan genus, in the description of the flowers of which I have been aided by Mr. Clarke's notes. The specimen is a solitary one.—J. D. H.

Fig. 1. Lip. 2. Column. *Both much enlarged.*

M Sâel et lith.

Chrysoglossum assamicum, Hk f.

PLATE 2063.

CHRYSOGLOSSUM ASSAMICUM, *Hook. f.*

ORCHIDEÆ. Subtribe DENDROBIEÆ.

C. assamicum, *Hook f. Fl. Brit. Ind.* v. 784; glaberrimum, folio longe petiolato lanceolato 5-nervi, scapo gracili elato, racemo laxifloro, floribus ½ poll. diam. gracile pedicellatis, sepalis petalisque oblongis obtusis, mento calcarato, labelli cuneiformis 3-lamellati lobis lateralibus brevibus obtusis, intermedio rotundato.

HAB. Assam, *Griffith.*

Rhizoma crassum, tortuosum. *Folium* 12 poll. longum, petiolo 6-pollicari basi vaginis laxis tubulosis membranaceis vestito. *Scapus* 1½-pedalis; racemus 2–3-pollicaris; bracteæ ½ poll. longæ, pedicellis gracilibus paullo breviores.

Of this I have seen but one specimen; it differs from *C. erraticum* in the flowers not being more than half as large, in the short pedicels, in the spurred mentum, narrower lip with shorter not recurved side lobes and a larger midlobe. The lamellæ of the disk are nearly alike in both, but in *C. assamicum* the auricles on the sides of the column are rather larger; the pollinia are subglobose and cohere by their flattened bases.—J. D. H.

Fig. 1. Flower. 2. Lip. 3. Column. 4. Pollinia. *All enlarged.*

M.S. del. et lith.

Chrysoglossum maculatum, Hk.f.

Plate 2064.

CHRYSOGLOSSUM MACULATUM, *Hook. f.*

Orchideæ. Tribe Dendrobieæ.

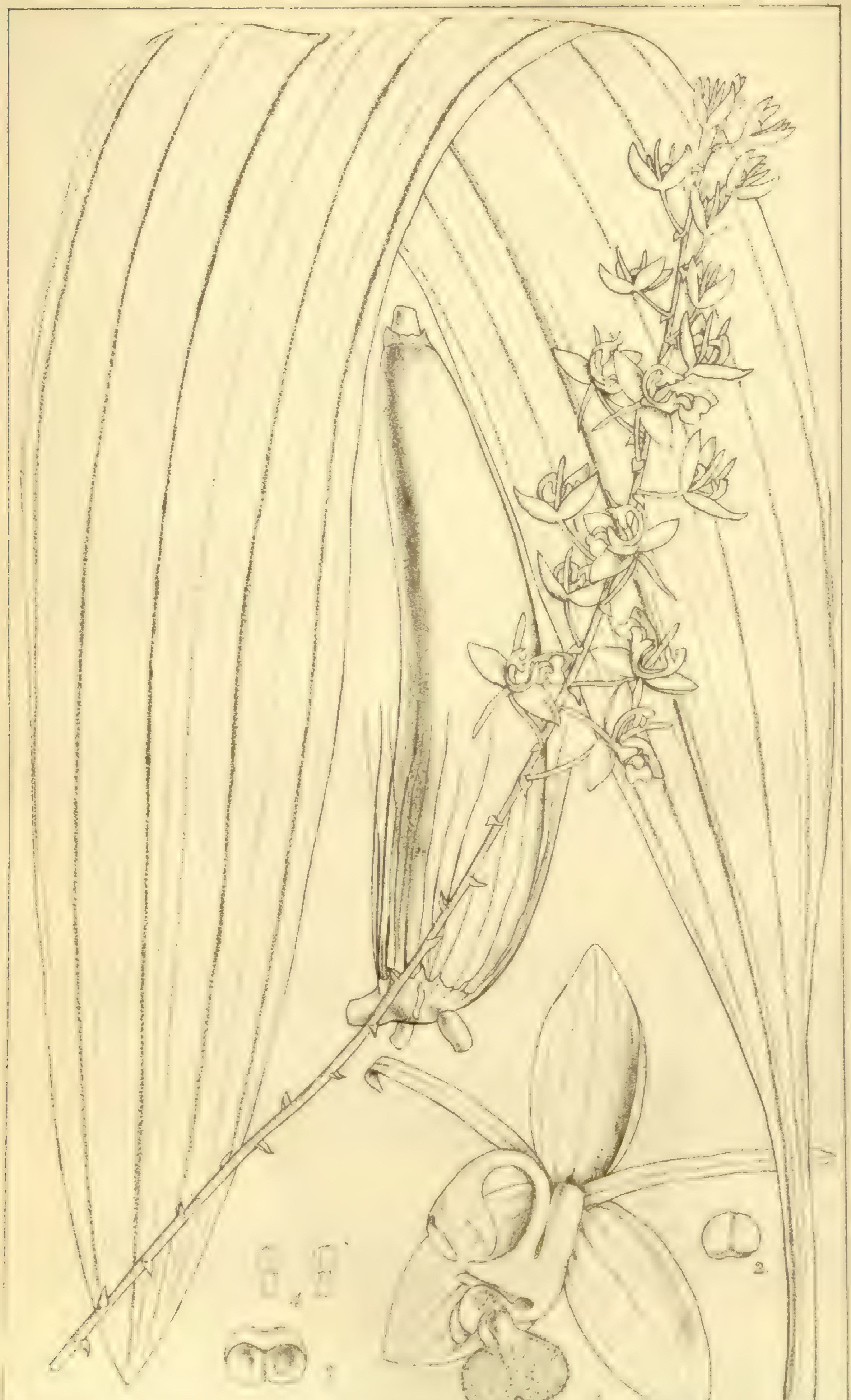
C. maculatum, *Hook. f. Fl. Brit. Ind.* v. 784, vi. 190; glaberrimum, folio breviter petiolato elliptico acuto 7-nervi, scapo gracili elato, vaginis laxis tubulosis, racemo laxe multifloro, floribus 1 poll. diam. breviuscule pedicellatis, sepalis petalisque oblongis obtusis falcatis, mento brevi conico obtuso, labelli 3-lamellati basi biauriculati lobis lateralibus cuneato-oblongis obtusis terminali orbiculari concavo, lamellis subæquilongis. Tainia maculata, *Hook. f. l. c.* v. 821. Ania maculata, *Thwaites Enum.* 301.

Hab. Ceylon; at Hapootelle, alt. 5,000 feet, *Thwaites*.

Rhizoma crassum. *Folium* 10 poll. longum, $3\frac{1}{2}$ poll. latum; petiolo pseudobulbo $2\frac{1}{2}$-pollicari elongato-conico insertum. *Scapus* 2-pedalis; racemus 6-pollicaris; bracteæ $\frac{1}{3}$ poll. longæ; pedicelli graciles, bracteis paullo longiores. *Sepala* et *petala* viridia, punctis purpureis striolata; labellum album, basin versus purpureo-maculatum; columna flava, auriculis triangularibus obtusis.

More nearly allied to *C. erraticum* than to *C. assamicum*, and having as large flowers, but differing in the elliptic leaf with shorter petiole, in the short pedicels and conical mentum, in the shorter straight lateral lobes of the lip, its larger midlobe, in the lamellæ of the lip being nearly equal in length, and in the longer auricles of the column. I am indebted to Dr. Trimen for the loan of the only known specimen of Thwaites' *Ania* (*Tainia*) *maculata*, which belongs to the Herbarium of the Peradenyia Gardens. Having found it to be a *Chrysoglossum*, I described it as such, and returned it; a fact which I had forgotten when many months afterwards I took the genus *Tainia* in hand. This accounts for my having inadvertently included it (following Thwaites) in the latter genus, as a species unknown to me! A return of the loan by Dr. Trimen has enabled me to give the accompanying figure of this unique plant. The fact that the four Indian species of *Chrysoglossum* are as yet represented by solitary examples of each, shows how little is known of Indian *Orchideæ*.—J. D. H.

Fig. 1. Side view of flower. 2. Front view. 3. Column. 4. Anther. 5. Pollinia. *All enlarged.*



Collabium Wrayi, Hk. f.

Plate 2065.

COLLABIUM WRAYI, *Hook, f.*

Orchideæ. Subtribe Dendrobieæ.

C. Wrayi, *Hook. f. Fl. Brit. Ind.* v. 784; pseudobulbo subcylindraceo, folio breviter petiolato lanceolato subacuto, scapo elato gracillimo flexuoso vaginulis bracteiformibus sparsis instructo, racemo elongato laxe multifloro, sepalis consimilibus ellipticis obtusis, petalis linearibus angustis, labello parvo ad apicem pedis columnæ buccinæformis apice bifidæ inserto, lobis lateralibus spathulatis auriculæformibus falcatim decurvis terminali obcordato tomentoso basi bigibbo, columna gracili incurva apice longe 2-brachiata.

Hab. Malay Peninsula. Perak, on Waterfall Hill, alt. 800 feet, *Wray, Scortechini.*

Rhizoma validum, repens. *Pseudobulbi* $3\frac{1}{2}$ poll. longi, $\frac{2}{3}$ poll. diam., teretes, læves, basi reliquiis fibrosis vaginarum instructi. *Folium* 18 poll. longum, 2 poll. latum, basi in petiolum angustatum. *Scapus* cum racemo folio longior; bracteæ parvæ, ovatæ, persistentes; pedicelli $\frac{1}{2}$ poll. longi. *Flores* $\frac{1}{2}$ poll. diam.; sepala 5-nervia; petala 2-nervia patentia; columnæ pes magnus, cavus, antice 2-fidus; labelli lobuli laterales extus pulvina tomentosa instructi; anthera hemisphærica leviter 2-loba; pollinia 2, minima, globosa, in glandulam latam sessilia.

A very singular plant, the structure of the column and lip of which is not easily made out from dried specimens, and some corrections may have to be made in the description and figure here given. As it appears to me, the rather slender strongly incurved column is incumbent on a large fleshy trumpet-shaped hollow body bifid in front, which is either its foot, or belongs to the lip. In Miss Smith's drawing the column is inserted much further from the base of the sepals than in my own analysis, in which the base of the column is seated on the top of the ovary, with the trumpet-shaped organ proceeding from its base. The pollinia, which are extremely minute, are globose, deeply grooved in front, and sessile on a broad short strap or gland, which is, I think, at length bipartite. The attachment of the lateral sepals to the foot of the column is slight, not as described in *Collabium*, to which genus, however, this curious plant must be assigned. There is a drawing of it by Father Scortechini in a collection lent to me by the Government of Perak, which represents the plant as of a pendulous habit. The genus should, I suspect, be transferred to *Vandeæ*, and be placed near *Eulophia*.—J. D. H.

Fig. 1. Flower. 2 and 3. Anther. 4. Pollinia. *All enlarged.*

M. Säel, et lith.

Eria Kingii, Hk. f.

Plate 2066.

ERIA KINGII, *Hook. f.*

Orchideæ. Subtribe Erieæ.

E. (**Eriura**) **Kingii**. *Hook. f. Fl. Brit. Ind.* v. 790; caule elato robusto, foliis ensiformibus oblique acuminatis, scapis foliis longioribus vaginis bracteiformibus numerosis, racemis elongatis lanatis multidensifloris, bracteis minutis reflexis ovatis, pedicellis brevibus, floribus parvis, petalis oblongis, labello cuneiformi v. suborbiculari 3-lobo basi cuneato-calloso, lobis lateralibus subfalcato-oblongis obtusis sinubus utrinque unidentatis, intermedio unguiculato subreniformi v. quadrato, axi inter lobos laterales discoque lobi terminalis tomentosis.

Hab. Malayan Peninsula; at Perak, alt. 3,000–4,500 feet, *Scortechini*, and *King's Collector*.

Caules fasciculati, 2–3-pedales, crassitie pennæ olorinæ. *Folia* 5–7 poll. longa, $\frac{1}{2}$–$\frac{3}{4}$ poll. lata, sessilia, coriacea, rigida, nervosa. *Scapi* terminales, terni, graciles, unacum racemis curvis albo-lanati, pedales; bracteæ $\frac{1}{12}$ poll. longæ. *Flores* albo-virides, intus cærulei; sepalum dorsale ellipticum, obtusum, lateralia triangulari-ovata, obtusa; petala 1-nervia, apice rotundata. *Capsulæ* pollicares, lineari-fusiformes, gracile pedicellatæ.—J. D. H.

Fig. 1. Side view of flower. 2. Front view. 3 and 4. Varieties of lip. 5. Anther. *All enlarged.*

M.S. del, et lith.

Eria iridifolia Hk.f.

PLATE 2067.

ERIA IRIDIFOLIA, *Hook. f.*

ORCHIDEÆ. Subtribe ERIEÆ.

E. (Eriura) iridifolia, *Hook. f. Fl. Brit. Ind.* v. 790; caule brevi crasso, foliis 1–1½-pedalibus ensiformibus acuminatis, scapis foliis multo brevioribus, vaginis bracteiformibus, racemis multi- densifloris stellato-tomentellis, floribus minutis subsessilibus, petalis linearioblongis, labello suborbiculari sessili glabro basi calloso, lateribus rotundatis, lobis lateralibus brevibus obtusis, terminali parvo concavo, disco nudo v. parce pubescente.

HAB. Malay Peninsula; Perak, on Gunong Batu Pateh, *Wray*.

Caulis spathaceus, basi crassitie pollicis et ultra, e basi foliosus. *Folia* recurva, crasse coriacea, 1–1½ poll. lata, e basi vaginante ad apicem obliquam sensim angustata. *Racemi* terminales, terni, 4–6 poll. longi, decurvi; bracteæ parvulæ, ovatæ; flores ½ poll. longi, tomentosi, albi purpureo lineati. *Sepalum* dorsale ovato-oblongum, obtusum; lateralia multo majora, late ovata, apice rotundata; petala 1-nervia, apice rotundata, punctata; labellum disco lævi v. obscure 2-carinato.

The minute flowers of this species are so greatly hardened and contracted in drying, that I have found it difficult to restore them by maceration for description. I have seen but one specimen. The base of the stem, as clothed with leaf-sheaths, must when fresh have been as thick as a child's wrist.—J. D. H.

Fig 1. Side view of flower. 2. Front view. 3. Petal. 4. Lip, from another specimen. *All enlarged.*

M.S. del, et lith

Eria longifolia, Hk.f.

PLATE 2068.

ERIA LONGIFOLIA, *Hook. f.*

ORCHIDEÆ. Subtribe ERIEÆ.

E. (Eriura) longifolia, *Hook. f. Fl. Brit. Ind.* v. 790; caule elongato inferne longe vaginato superne folioso, foliis 12–14-pollicaribus anguste ensiformibus fere gramineis, scapis solitariis brevibus nudis spicisque brevibus densifloris stellato-pubescentibus, floribus sessilibus minutis, bracteis minimis ovatis, petalis oblongis, labello cupulari integro.

HAB. Malay Peninsula; Perak, on Ellu Batang Padang, alt. 4,900 feet, *Wray*.

Caules cæspitosi, 6–10 poll. longi, vaginis lanceolatis acuminatis membranaceis superne tecti. *Folia* pauca, $\frac{1}{3}$–$\frac{2}{3}$ poll. lata, nervosa, basi angustata. *Racemi* terminales, solitarii. *Flores* vix $1\frac{1}{2}$ poll. longi, dense tomentosi, pallidi; sepala intus glandulosa, dorsale oblongum lateralibus ovato-orbicularibus multoties minore; labellum parvum, ore antice paullo producto.

The specimens of this species (two) are in bud only, and the lip as represented at fig. 4 may be found to differ from that of an expanded flower. The stems are far more slender and weak than in *E. Kingii* or *iridifolia*, clothed with long membranous sheaths that conceal those of the leaves, and the racemes are very short and solitary.—J. D. H.

Fig. 1. Portion of rachis of spike with bracts and bud. 2. Bud, laid open. 3. Petal. 4. Lip. 5. Anther. 6. Pollinia. *All enlarged.*

M. S del. et lith.

Eria Andersoni, Hk. f.

Plate 2069.

ERIA ANDERSONI, *Hook. f.*

Orchideæ. Subtribe Erieæ.

E. (Hymeneria) Andersoni, *Hook. f. Fl. Brit. Ind.* v. 795; pseudobulbis crassis cæspitosis cylindraceis 4–5-articulatis striatis, foliis 2 lineari-lanceolatis, spica suberecta pubescente, bracteis amplis herbaceis ovato-lanceolatis revolutis, floribus breviter pedicellatis secundis, sepalis recurvis lateralibus triangulari-ovatis acutis, mento amplo conico obtuso, petalis oblongo-lanceolatis, labelli lobis lateralibus brevibus obtusis, intermedio orbiculari bilobo convexo recurvo, disco bicarinato.

Hab. Sikkim Himalaya; at Darjeeling, alt. 7,000–8,000 feet, *Anderson* (*Ic. in Herb. Hort. Calcutt.*).

Pseudobulbi 2–5 poll. longi, $\frac{1}{2}$ poll. diam., virides luteo striati. *Folia* 5–8 poll. longa, $\frac{2}{3}$–$\frac{3}{4}$ poll. lata, acuta, terminalia. *Scapus* brevis, latere pseudobulbi insertus; spica seu racemus secundus, inclinatus, rachi robusta viridi; bracteæ $\frac{1}{2}$–$\frac{3}{4}$ poll. longæ, virides; pedicelli unacum ovario $\frac{1}{2}$–$\frac{3}{4}$ poll. longi, virides. *Flores* $\frac{1}{5}$ poll. diam.; sepala et petala alba roseo-striata; labellum purpureum, lobis lateralibus albo-marginatis, lobo intermedio fulvo basi purpureo.

Of this species there are two careful drawings belonging to the Calcutta Gardens, lent to me by Dr. King; and the accompanying plate is a copy of one made by the excellent botanical artist Lutchman Singh. It belongs to the puzzling section of the genus *Hymeneria*, with *E. graminifolia* (Pl. 1847), *E. excavata* (Pl. 1846), *E. alba* (Pl. 1845), *E. confusa* (Pl. 1850), *E. acervata* (Pl. 1849), and the following (Pl. 2070); from all of which but the last it differs in the broad herbaceous revolute bracts, and from all in the orbicular 2-lobed mid-lobe of the lip. It is nearer to *E. vittata*, Lindl. (also a Sikkim species), of which the bracts are unknown, and which has a differently shaped lip. The bracts are those of *E. bractescens*, a Singapore species with slender long-pedicelled flowers, and of *E. recurvata*, to which it is so nearly allied that I think it would be better placed nearer to it than to *E. excavata* and *alba*.—J. D. H.

Fig. 1. Flower. 2. Lip and column. 3. Lip. 4. Anther. 5. Pollinia. *All enlarged.*

M.S del,et lith

Eria recurvata, Hk.f.

Plate 2070.

ERIA RECURVATA, *Hook. f.*

Orchideæ. Subtribe Erieæ.

E. (**Hymeneria**) **recurvata,** *Hook f. Fl. Brit. Ind.* v. 797; pseudobulbis cæspitosis crassis cylindraceis 4–5-articulatis, foliis 3–5 elliptico-lanceolatis in petiolum angustatis, pedunculo laterali crasso brevi bracteato, racemo inclinato pubescente multi- subdensifloro, rachi valida, bracteis ovato-lanceolatis pedicellos æquantibus, sepalis falcato-lanceolatis acuminatis recurvis, mento amplo rotundato incurvo, petalis lanceolatis acuminatis, labelli lobis lateralibus brevibus rotundatis, terminali obcordato rotundato apiculato, disco 2-carinato.

Hab. Malayan Peninsula; Perak, *King's Collector* (*Ic. in Herb. Hort. Calcutt.*).

Pseudobulbi 4–6-pollicares, $\frac{2}{3}$ poll. diam., sulcati, nudi. *Folia* in caudicem brevem ad apicem pseudobulbi inserta, 6–8 poll. longa, $1\frac{1}{2}$–2 poll. lata, nervosa. *Scapus* unacum racemo 6-pollicaris, rachi viridi; bracteæ $\frac{1}{2}$ poll. longæ, acuminatæ, flavidæ; pedicelli cum ovario $\frac{2}{3}$-pollicares. *Flores* $\frac{2}{3}$ poll. diam.; sepala et petala pallide flava, purpureo striata; labellum pallide purpureum, lobo terminali flavescente disco pallido; columna elongata.

Closely allied to the preceding (*E. Andersoni*), but a much larger plant, with broader petioled leaves and larger flowers that are not secund, the sepals and petals are narrower and more acuminate. The figure is copied from one made in the Calcutta Botanical Gardens in 1882.—J. D. H.

Fig. 1. Bract and flower. 2. Dorsal view of flower. 3. Lip. 4 and 5. View of column. 6 and 7. Pollinia. *All enlarged.*

M.S.del.et lith.

Eria saccifera, Hk. f.

Plate 2071.

ERIA SACCIFERA, *Hook. f.*

Orchideæ. Subtribe Erieæ.

E. (Hymeneria) saccifera, *Hook. f. Fl. Brit. Ind.* v. 797; pseudobulbis cæspitosis angustis elongatis cylindraceis inarticulatis vaginatis, foliis 2–3 petiolatis pedalibus elongato-oblanceolatis acuminatis plicatis, scapo subterminali gracili foliis breviore, racemo multifloro decurvo pubescente, bracteis oblongo-lanceolatis pedicellos æquantibus, floribus parvis, sepalis obtusis, mento sacciformi sepalo dorsali multo longiore basi rotundato, petalis ellipticis, labelli unguiculati limbo late spathulato tomentoso integro, columna brevissima.

Hab. Malayan Peninsula; Perak, on Gunong Batu Pateh, *Wray*.

Pseudobulbi 3-pollicares, $\frac{1}{3}$ poll. diam., basin versus paullo incrassati, demum nudi. *Folia* terminalia pedalia et ultra, 1–$1\frac{1}{2}$ poll. lata, in petiolum 1–2-pollicarem angustata. *Scapus* unacum racemo 6-pollicaris, laxiflorus; pedicelli $\frac{1}{3}$ poll. longi. *Flores* $\frac{1}{3}$–$\frac{1}{2}$ poll. longi, membranacei; mentum magnum sepalo dorsali subtriplo longius: sepalum dorsale ovato-oblongum lateralibus latissimis apice rotundatis multoties minus; petala 3-nervia, subacuta.

An anomalous species of which I have seen but one specimen; the cylindric pseudobulb, leafy at the top, is that of the section *Hymeneria*, but the perianth and column are those of *Eriura*. The saccate mentum is much broader and longer in proportion to the dorsal sepal and free part of the lateral than is represented in the figure. Mr. Wray describes the colour of the flowers as 'shades of dull pink, claret, and yellow.'—J. D. H.

Fig. 1. Side of the flower. 2. Front view, with the sepals spread apart and the lip removed. 3 and 4. Lips from different flowers. *All greatly enlarged.*

M.S. del et lith.

Eria Maingayi, Hk.f.

PLATE 2072.

ERIA MAINGAYI, *Hook. f.*

ORCHIDEÆ. Subtribe ERIEÆ.

E. (Hymeneria) Maingayi, *Hook. f. Fl. Brit. Ind.* v. 798; pseudobulbis cæspitosis fusiformibus v. cylindraceis inarticulatis vaginatis 2-foliatis, foliis 3–4-pollicaribus linearibus acuminatis coriaceis, racemis breviter pedunculatis gracilibus suberectis foliis multo brevioribus laxifloris parce puberulis, bracteis oblongis pedicellos graciles subæquantibus, floribus parvis, sepalo dorsali oblongo lateralibus triangulari-ovatis subfalcatis subacutis, mento rotundato, petalis sepalis æquilongis lineari-oblongis 5-nerviis, labello sessili obovato, lobis lateralibus brevibus rotundatis crenulatis, intermedio parvo rotundato pulvina tomentosa basi instructo, disco inter lobos laterales 3-carinato.

HAB. Penang; on Government Hill, *Maingay*.

Pseudobulbi 1–2-pollicares, dense conferti, teretes, læves. *Folia* $\frac{1}{2}$ $\frac{1}{3}$ poll. lata, acuta, basi angustata, 1-nervia, patentia. *Racemi* subterminales, 2–3 poll. longi; bracteæ $\frac{1}{3}$ poll. longæ. *Flores* $\frac{1}{2}$ poll. diam.; sepala subacuta; columna longiuscula.

The narrow leathery leaves are unlike those of most species of the *Hymeneria* section.—J. D. H.

Fig. 1. Flower. 2. The same, with the segments spread out. *Both greatly enlarged.*

M.S. del et lith.

Eria andamanica, Hk.f.

PLATE 2073.

ERIA ANDAMANICA, *Hook. f.*

ORCHIDEÆ. Subtribe ERIEÆ.

E. (Dendrolirion) andamanica, *Hook. f. Fl. Brit. Ind.* v. 801; rhizomate crasso, pseudobulbis remotis crassis ellipsoideis, foliis breviter petiolatis lanceolatis crasse coriaceis, pedunculis foliis brevioribus curvis 3–4-floris floribusque albo-lanatis basi vaginis tubulosis imbricatis coriaceis instructis, bracteis amplis, floribus amplis, sepalo dorsali lineari-oblongo lateralibus falcatis acuminatis, petalis linearibus, labello obovato-oblongo unguiculato puberulo lobis lateralibus brevibus acutis, terminali orbiculato 2-fido.

HAB. South Andaman Island, *Kurz*.

Rhizoma crassitie pennæ anserinæ, nudum, lignosum. *Pseudobulbi* 2–2½ poll. longi, subcompressi, cicatricati. *Folia* 4–7 poll. longa, 1–1½ lata, sub-5-nervia, obtusa, in petiolum angustata. *Pedunculus* 3–4 poll. longus, curvus, robustus, rachi racemi angulata; bracteæ ½–2⅓ poll. longæ, coriaceæ, late oblongæ; pedicelli cum ovariis pollicares; flores 1½ poll. longi, mento magno obtuso; perianthii segmenta multinervia; petala sepalo dorsali fere æquilonga; columna longiuscula.

Closely allied to the common and variable Himalayan *E. flava*, which extends to Tenasserim, differing in the much longer and narrower lip which has neither calli nor ridges, and the long column.—J. D. H.

Fig. 1. Flower, with the segments spread apart. 2. Side view of lip. 3. Front view of lip. *All enlarged.*

A.

B.

MS. del. et lith.

A. Eria exilis, Hk.f.
B, Ceratostylis eriæoides, Hk.f.

Plate 2074.

A.—ERIA EXILIS, *Hook. f.*

Orchideæ. Subtribe Erieæ.

A.—**Eria (Bryobium) exilis**, *Hook. f. Fl. Brit. Ind.* v. 788; perpusilla, florens aphylla, glabra, pseudobulbis globosis v. ovoideis, scapo capillari flexuoso laxe squamato, racemo laxifloro, bracteis cymbiformibus, floribus minimis, sepalo dorsali oblongo obtuso, lateralibus uncinatim decurvis obtusis, mento sepalo dorsali æquilongo incurvo obtuso, petalis lineari-obovatis obtusis, labello minimo elliptico-oblongo obtuso carnosulo.

Hab. Travancore, *Johnson*.

Pseudobulbi cortici appressi, sicci compressi, fere plani, reticulati. *Scapus* cum racemo 1–1½-pollicaris; pedicelli bracteis obtusis recurvis breviores. *Flores* $\frac{1}{1\frac{1}{2}}$ poll. longi; sepalum dorsale lateralibus paullo longius; petala uninervia, sepalis breviora; columna brevissima.

I have with difficulty made out what I think is the structure of the flower of this curious little plant, the figures of which do not well represent its capillary habit, for the stem is not thicker than a horse-hair. The specimens, of which there are only two, were in Dr. Wight's herbarium, which he presented to Kew, with a note that they were collected by Mr. Johnson, who was, I believe, a missionary, and an ardent collector of plants in Mysore and the Ghats. It is closely allied to *E. articulata*, of Ceylon, in the scape, bracts, and spike, but differs entirely in the form of the petals, sepals, and lip.—J. D. H.

Fig. 1. Portion of rachis of raceme, bract, and flower. 2. Flower, with the sepals spread apart. 3. Petal. 4 and 5. Appearance of lip. *All greatly enlarged.*

B.—CERATOSTYLIS ERIÆOIDES, *Hook. f.*

Orchideæ. Subtribe Cœlogyneæ.

B.—**Ceratostylis eriæoides**, *Hook. f.*; parvula, caulibus brevibus densse cæspitosis vaginatis 1-foliatis, foliis 1½–2 poll. longis lineari-

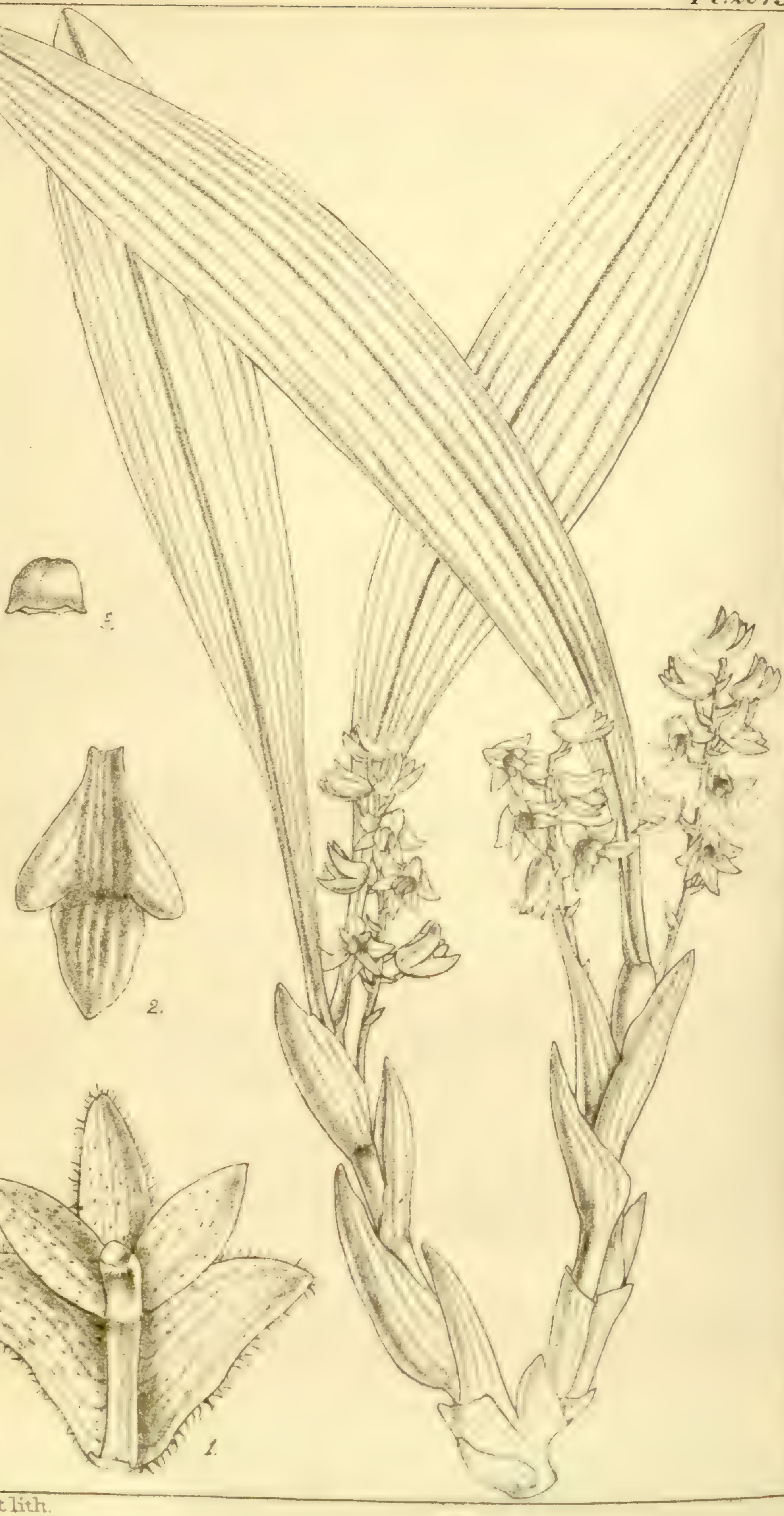
oblanceolatis obtusis crassis, scapis foliis subæquilongis filiformibus 1-floris floribusque majusculis tomentellis, sepalis ovato-lanceolatis, petalis oblanceolatis acutis, mento obtuso, labello minuto basi saccato v. fere calcarato, limbi linguæformis disco carinis 2 brevibus pubescentibus instructo. Eria pygmæa, *Hook. f. Fl. Brit. Ind.* v. 804.

Hab Malayan Peninsula; Perak, *Wray.*

Caules $\frac{1}{2}$ poll. longi, tenues, rigidi; vaginæ amplæ, nervosæ, membranaceæ, acutæ, caulibus longiores. *Folium* $1\frac{1}{2}$–$2\frac{1}{2}$ poll. longum, $\frac{1}{3}$ poll. latum, erectum, crasse coriaceum, obtusum v. apice emarginatum. *Scapus* cauli lateralis, solitarius, basi vaginis lanceolatis instructus; bracteæ minutæ, ovatæ, acutæ. *Flos* $\frac{1}{2}$–$\frac{2}{3}$ poll. diam.; sepala 5-nervia, lateralia basi in sacculum (mentum) connata; petala 3-5-nervia sepalis æquilonga; labellum sepalis multoties minus; clinandrium subsessile, valde dilatatum, hippocrepiforme.

The first specimens that I received of this curious little plant were in so imperfect a state that I failed to make out the structure of the column, and from its close resemblance in every respect to the Malayan *Eria Pleurothallis* I incautiously described it as a species of that genus. Additional specimens received from Dr. King, collected by Mr. Wray, together with a pencil drawing of the plant by Father Scortechini, prove it to be an undoubted *Ceratostylis*, though not closely allied to any hitherto known Indian species. The very minute lip appears to be fleshy, and hence difficult to restore after being dried. Scortechini figures it as tongue-shaped beyond the sac or spur, with a slight fold on each side towards the base, as in the accompanying figures 1 and 2, That represented at fig. 3 was taken from a very much decayed flower, and cannot be depended on.—J. D. H.

Fig. 1. Flower. 2. Column and lip. 3. Lip, from a much-damaged flower (to be cancelled). 4. Anther. *All enlarged.*



M.S. del. et lith.

Eria lancifolia, Hk.f.

Plate 2075.

ERIA LANCIFOLIA, *Hook. f.*

Orchideæ. Subtribe Erieæ.

E. (Dendrolirion?) lancifolia, *Hook. f. Fl. Brit. Ind.* v. 804; rhizomate ramoso laxe vaginato apicibus pseudobulbosis 1 2-foliatis, foliis 4–5-pollicaribus petiolatis lanceolatis v. oblanceolatis acutis subplicatis, racemis brevibus gracilibus albo-tomentellis 6-10-floris, bracteis parvis ovatis membranaceis, floribus parvis breviter pedicellatis, sepalo dorsali petalisque consimilibus oblongis, lateralibus oblique triangulari-ovatis obtusis, mento rotundato, labelli hypochilo cuneato lobis lateralibus obtusis, epichilo æquilongo ovato obtuso, disco carina tomentosa a basi ad apicem instructo.

Hab. Malayan Peninsula; Perak, at a low level, *Dr. King's Collector.*

Rhizomata vage ramosa, in ramos erectos vaginatos articulatos abeuntia, basi radicantia, radicibus fibrosis densissime confertis longissimis; vaginæ pollicares, inflatæ, oblongæ, obtusæ. *Folia* $\frac{3}{4}$–1 poll. lata, terminalia, erecta, plana, multinervia. *Racemi* laterales, breviter pedunculati, $1\frac{1}{2}$–2 poll. longi, erecti; pedicelli sepalis breviores. *Flores* $\frac{1}{4}$ poll. lati, albi, intus glabri cærulei et punctati; petala 3-nervia, subacuta; columna brevissima.

I am not sure that I have correctly described the habit of this species, nor whether it should be placed in the group *Hymenaria* or *Dendrolirion*. The masses of long slender fibrous roots are not common in the genus.—J. D. H.

Fig. 1. Flower, with the lip removed and sepals spread apart. 2. Lip. 3. Anther. *All enlarged.*

VOL. I.—PART IV.] [JANUARY.

HOOKER'S
ICONES PLANTARUM;

OR,

FIGURES, WITH DESCRIPTIVE CHARACTERS AND REMARKS,

OF NEW AND RARE PLANTS,

SELECTED FROM THE

KEW HERBARIUM.

FOURTH SERIES.

EDITED FOR THE BENTHAM TRUSTEES BY

DANIEL OLIVER, F.R.S., F.L.S.

EMERITUS PROFESSOR OF BOTANY IN UNIVERSITY COLLEGE, LONDON: LATE KEEPER OF THE HERBARIUM AND LIBRARY, ROYAL BOTANIC GARDENS, KEW.

Under the Authority of the Director of the Royal Botanic Gardens, Kew.

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M.S del et lith

Eria crassicaulis Hk.f.

PLATE 2076.

ERIA CRASSICAULIS, *Hook. f.*

ORCHIDEÆ. Subtribe ERIEÆ.

E. (Bambusifolia) crassicaulis, *Hook. f.* ; caule crasso elongato, foliis subterminalibus elliptico-lanceolatis, racemo floribusque fusco-tomentosis, sepalis lateralibus ovato-oblongis obtusis decurvis, mento brevi incurvo, petalis oblongis apice rotundatis, labello breviter unguiculato, lobis lateralibus angustis, intermedio late emarginato basi vix contracto, intus furfuraceo. *Fl. Brit. Ind.* v. 805. E. clavicaulis ?, *Lindl. in Journ. Linn. Soc.* iii. 59.

HAB. Khasia Hills, Bengal; at Pomrang, alt. 4–5,000 feet. *J. D. Hooker* and *T. Thomson.*

Caulis 10–12-pollicaris, crassitie interdum pollicis, internodiis inferioribus 1–2-pollicaribus. *Folia* 4–6-pollicaria, acuta, apice inæqualiter 2-fida, coriacea. *Racemi* foliis æquilongi, patentes, validi, flexuosi, laxiflori; bracteæ $\frac{1}{4}$ poll. longæ, ovato-cordatæ, reflexæ; ovarium cum pedicello $\frac{3}{4}$–1 poll. longum. *Flores* pallidi, intus fusco-purpureo vittati; sepala 5-nervia; petala 3-nervia. *Columna* magna, decurva.

Nearly allied to *E. bambusifolia*, Lindl., but with narrower leaves, stouter raceme, larger bracts, and a different lip.—J. D. H.

Fig. 1. Flower. 2. Lip. 3. Anther. 4. Pollinia. *All enlarged.* Figs. 5, 6, and 7 (from a specimen of this or a closely allied species that flowered in Kew, December 1866. *Also enlarged*).

M. S. del. et lith.

Eria leptocarpa, Hk.f.

Plate 2077.

ERIA LEPTOCARPA, *Hook. f.*

Orchideæ. Subtribe Erieæ.

E. (Bambusifolia) leptocarpa, *Hook. f.*; caule elongato robusto, foliis lineari-lanceolatis v. fere loratis oblique obtusatis, racemis foliis multo brevioribus breviter pedunculatis floribusque glabris, sepalis lateralibus ovato-lanceolatis acuminatis, petalis lineari-oblongis obtusis, mento obtuso incurvo, labello late unguiculato subspathulato, disco ad medium tricarinato, lobis lateralibus brevibus terminalem rotundatum furfuraceum incumbentibus, columna brevissima, capsulis 2–3-pollicaribus.—*Fl. Brit. Ind.* v. 805.

Hab. Malayan Peninsula; at Perak, *Scortechini*, *King's Collector*.

Caulis 2-3-pedalis, crassitie inferne digitis minoris, internodiis 1–1½-pollicaribus. *Folia* 6-8-pollicaria, sessilia, tenuiter coriacea. *Racemi* 1–1½ poll. longi, 4-6-flori, pedunculo rachique gracilibus; bracteæ ¼–½-pollicares, ovato-lanceolatæ, persistentes; ovario gracili, cum pedicello ½–1 poll. longo. *Flores* extus flavi, brunneo irrorati, intus pallide straminei; sepala lateralia ⅓ poll. longa, 5-nervia. *Capsula* erecta, gracilis, obtuse angulata, pedicello brevi.

A very distinct species, remarkable for the long slender capsule, which resembles that of *E. nutans*, Lindl.—J. D. H.

Fig. 1. Flower, with lip removed. 2. Column and lip. 3. Front view of lip. 4. Anther. *All enlarged.*

M.S. del. et lith.

Eria gracilis, Hk.f.

PLATE 2078.

ERIA GRACILIS, *Hook. f.*

ORCHIDEÆ. Subtribe ERIEÆ.

E. (Trichotosia) gracilis, *Hook. f.*; caule gracili, vaginis superioribus hirsutis, foliis anguste lanceolatis acutis utrinque glabris, pedunculis brevibus 2 3-floris, floribus hirsutis, sepalis lateralibus lanceolatis erectis, mento elongato calcariforme, petalis lineari-oblongis obtusis, labelli furfuraceo-pubescentis longe unguiculati limbo parvo spathulato-rotundato v. flabelliforme.—*Fl. Brit. Ind.* v. 806.

HAB. Malayan Peninsula; Perak, *Scortechini.*

Caulis 6-8-pollicaris, crassitie pennæ anatinæ. *Folia* 1½-2-pollicaria, erecto-patentia, juniora parce pilosa. *Racemi* vix pollicares, pedunculo hirsuto v. glabrato; ovario brevi, bracteæ ovato-lanceolatæ, ⅓—⅔ poll. longæ, ovaria superantes. *Flores* ½ poll. longi; mento recto sepalis dimidio breviore; labello fere recto, lamina crassiuscula, crenulata medio tumida; columnæ glabræ pes villosa.

The smallest Indian species of the section *Trichotosia*, with rather a long spur-like mentum, as in *E. oligantha*.—J. D. H.

Fig. 1. Bract and flower. 2. The same, with the perianth spread open. 3. Lip. *All enlarged.*

M. S. del. et lith.

Eria oligantha Hk. f.

PLATE 2079.

ERIA OLIGANTHA, *Hook. f.*

ORCHIDEÆ. Subtribe ERIEÆ.

E. (Trichotosia) oligantha, *Hook. f.*; fere glabra, foliis crasse coriaceis ovato-lanceolatis subtus tomentosis glabratisve, floribus 1–2 in pedunculo brevissimo sessilibus parce pubescentibus, sepalis lateralibus ovato-lanceolatis acuminatis, petalis oblanceolatis acutis, mento calcariforme, labelli longe unguiculati pubescentis lamina obovato-spathulata breviter 3-loba, lobis rotundatis intermedio crasso crenulato.—*Fl. Brit. Ind.* v. 807.

HAB. Penang, *Maingay*.

Caules 10–12-pollicares, curvi, crassitie fere pennæ anserinæ, apicem versus hirsuti. *Folia* 2–2½ poll. longa, sessilia, apice oblique obtusata, marginibus sicco recurvis, nervis immersis. *Racemi* ½–⅔ poll. longi, 2–3-flori; bracteæ late ovatæ, ovaria superantes. *Flores* ½ poll. longi, hirsuti, demum glabrati, mento recto interdum sepala fere æquante. *Columna* et pes ejus sparse hirsutæ.

In structure of the flower very near *E. gracilis*, but a much larger plant, with very different thickly coriaceous leaves.—J. D. H.

Fig. 1. Flower. 2. Petal. 3. Column and lip. 4. Lip. *All enlarged.*

M.S. del. et lith.

Eria tuberosa, Hk.f.

Plate 2080.

ERIA TUBEROSA, *Hook. f.*

Orchideæ. Subtribe Erieæ.

E. (**Trichotosia**) **tuberosa,** *Hook. f.*, caule glabrescente basi tuberosa, foliis lineari-lanceolatis crasse coriaceis utrinque glabris, floribus in pedunculum brevissimum binis pedunculisque hirsutis, bracteis magnis late ovatis pedunculum vaginantibus, sepalis ovato-lanceolatis, mento saccato, petalis anguste spathulatis, labello longe unguiculato pubescente, lamina obovata subtriloba, lobulo intermedio retuso v. dilatato.—*Fl. Brit. Ind.* v. 807.

Hab. Malayan Peninsula; Perak, *Scortechini.*

Caules 6–8-pollicares, apice basique glabri v. hirsuti, internodio basilari in tuberem globosum $\frac{1}{4}$–$\frac{1}{2}$ poll. diam., incrassato. *Folia* 2–3-poll. longa, acuta, patentia v. recurva. *Flores* $\frac{2}{3}$ poll. longi, erecti; sepala paullo falcata; petala sparse pilosa; labelli unguis hirsuta, lamina crassa sparse pubescens, disco sæpe pulvino tomentoso instructo; columno et pes ejus pubescentes.

Closely allied to *E. gracilis* (Plate 2078), but the stems are tuberous at the base, the leaves much longer and more coriaceous, the mentum very short, the petals are not rounded at the tip, the column is hairy, and lip 3-lobed.—J. D. H.

Fig. 1. Flower. 2. Petal. 3. Lip. 4 Side view of column. 5. Front view 6. Anther. *All enlarged.*

Plate 2081.

ERIA APORINA, *Hook. f.*

Orchideæ. Subtribe Erieæ.

E. (**Trichotosia**) **aporina**, *Hook. f.*, foliosa, dense villoso-hirsuta, foliis crebris pollicaribus lineari-lanceolatis acutis, floribus solitariis? subsessilibus, bracteis ovatis, sepalis lateralibus late ovatis obtusis, mento conico incurvo, petalis oblongo-subspathulatis obtusis, labelli ciliati subpanduriformis hypochilo cuneato, lobis lateralibus brevibus obtusis, epichilo latiore orbiculato.—*Fl. Brit. Ind.* v. 808.

Hab. Malayan Peninsula; Perak, *Scortechini*, *King's Collector*.

Caules dense cæspitosi, 6–8-pollicares, foliis distichis perplurimis patulis v. recurvis obsiti, internodiis $\frac{1}{4}$-pollicaribus. *Folia* $\frac{1}{6}$–$\frac{1}{4}$ poll. lata, acuta, marginibus recurvis. *Flores* $\frac{1}{2}$ poll. longi, erecti, glabrati, ovarium bractea multo brevius, mentum sepalis subæquilongum; petala apice rotundata; labellum late ungulatum, lobis lateralibus apice rotundatis, disco nudo v. puberulo, axi lamellis 2 parvis brevibus prope isthmum instructo; columna glabra.

The habit is a good deal that of a *Dendrobium* of the *Aporum* section.—J. D. H.

Fig. 1. Peduncle and bract. 2. Flower, laid open, with the lip removed. 3. Lip. 4. Column. *All enlarged.*

M.S. del. et lith.

Eria Scortechinii, Hk.f.

Plate 2082.

ERIA SCORTECHINII, *Hook. f.*

Orchideæ. Subtribe Erieæ.

E. (Dilochiopsis) Scortechinii, *Hook. f.*; caule elongato robusto foliisque 3–5-pollicaribus linearibus v. lineari-lanceolatis oblique acuminatis glaberrimis, panicula terminali ramosa multiflora tomentosa, bracteis magnis, floribus subsessilibus, sepalis orbiculari-ovatis, mento rotundato, petalis late oblongis obtusis, labello parvo sessili lobis lateralibus oblongis erectis v. recurvis, intermedio rotundato v. late obcordato axi dense tomentoso.—*Fl. Brit. Ind.* v. 809.

Hab. Malayan Peninsula; Perak, *Scortechini, King's Collector.*

Caulis 3–6-pedalis, crassitie pennæ olorinæ, internodiis 1-1½ poll. longis teretibus. *Folia* ⅓ poll. lata, plana, nervosa, costa subtus valida. *Panicula* subsessilis, 4–5 poll. longa et lata, ramis ramulisque validis patentibus; bracteis ad axillas inferiores ⅕–⅔ poll. longis late ovatis concavis superioribus sensim minoribus, bracteolis ovaria brevia superantibus, omnibus chartaceis persistentibus. *Flores* conferti, parvuli, extus cerei, intus cærulescentes v. rosei; sepala ⅙ poll. longa, 3-nervia, carina dorso subalata; petala 3-nervia; labelli epichilo medio pulvinato et furfuraceo-tomentoso; columna brevissima, glabra.

A very remarkable plant, differing totally in habit from its congeners, and so closely resembling an *Arundina* of the *Dilochia* section, that, at first sight, it might be supposed to belong to that genus. The flowers are described by King's collector as waxy white with a blue tinge inside; by Wray as of a delicate pink, and the bracts as white. —J. D. H.

Fig. 1. Flower, laid open, with the lip removed. 2. Column and lip. 3 and 4. Different forms of lip. 5. Back and front view of anther. *All enlarged.*

M.S.del, et lith.

Claderia viridiflora, Hk.f.

Plate 2083.

CLADERIA VIRIDIFLORA. *Hook. f.*

Orchideæ. Subtribe Erieæ.

Claderia, *Hook. f. Fl. Brit. Ind.* v. 810; *Sepalum* dorsale oblongum obtusum, lateralia dorsali æquilonga sed latiora, basi saccata. *Petala* sepalis æquilonga, lineari-oblanceolata, obtusa, falcata, costa valida. *Labellum* sepalis æquilongum; hypochilum late oblongum v. orbiculare, coriaceum, brevissime unguiculatum, basi saccatum, disco carinis 2 validis tomentosis percurso, epichilo parvo in hypochilum latiorem incumbente, transverse oblongo retuso. *Columna* elongata, incurva, pilosa, clinandrio depresso, rostello hippocrepiforme porrecto; anthera terminalis, hemispherica, imperfecte 2-locularis; pollinia 2, pyriformia.—Herba *terrestris*. Rhizoma *elongatum, repens, flexuosum, ramosque erectos foliosos florentesque emittens, apice ascendente truncos arborum scandente.* Folia *interiora ampla, elliptico-oblonga, acuminata, plicata, 5-7-nervia, in petiolum latum angustata; superiora sensim minora et angustiora, sessilia.* Flores *majusculi, tomentosi, in spicam terminalem elongatam validam rigidam dispositi*; bracteæ *parvulæ, concavæ, obtusæ, persistentes.*

C. viridiflora, *Hook. f. Fl. Brit. Ind.* l.c.

Hab. Malayan Peninsula; Perak, *King's Collector*; Malacca, in dense jungles, *Maingay*.

Rhizoma crassitie pennæ anatinæ v. anserinæ, flexuosum, rigidum, internodiis $\frac{1}{2}$-pollicaribus, nodis fibrosis; apice in surculum radicantem scandentem vaginatum anno sequente florentem productus; caulis hodierne florens ad basin surculi enatus, erectus, pedalis et ultra, foliis vaginatus. *Folia* inferiora pedalia, 3 poll. lata, suprema lineari-lanceolata. *Racemus* 6–12 poll. longus, crassitie pennæ anatinæ, rigidus, erectus, multiflorus, breviter pedunculatus, pedunculo vaginis cylindraceis truncatis tecto; bracteæ $\frac{1}{8}$ poll. longæ et latæ, concavæ, coriaceæ, basi lata sessiles. *Ovarium* cum pedicello pollicare. *Perianthium* $1\frac{1}{2}$ poll. diam., pallide viride, colore saturatiore striatum; sepala coriacea, multinervia, nervulis transversis crebris; mentum rotundatum: petalorum et labelli nervis e costa radiantibus ramosis. *Columna* pilosa; pollinia obovoideo-reniformia.

A very remarkable plant, as to the affinity of which I am doubtful. The inflorescence and structure of the flowers for the most part are

those of an *Eria*; but if I am correct as to there being only two pollinia, its relationship is with *Chrysoglossum*, in *Dendrobieæ*. The habit, both from the specimens and the notes accompanying them, is that of a terrestrial orchid, the rhizome of which lengthens and ascends trees by rooting at the nodes. Unfortunately, the specimens are not good, the flowers are all detached, and I have had great difficulty in making out the structure of the clinandrium, &c.—J. D. H.

Fig. 1. Petal. 2. Lip. 3. Side view of column. 4. Front view. 5. Anther. 6. A pollinium. *All enlarged.*

M.S. del, et lith.

Phreatia nana, Hk.f.

Plate 2084.

PHREATIA NANA, *Hook. f.*

Orchideæ. Subtribe Erieæ.

P. nana, *Hook. f.*; pusilla, caulibus dense fastigiatis curvis foliosis, foliis distichis patenti-recurvis subulatis acutis carnosulis, spicis axillaribus foliis subæquilongis gracilibus recurvis multifloris, bracteis late ovatis ovarium vaginantibus, floribus minimis, sepalis æqualibus triangulari-ovatis petalis ovatis obtusis duplo longioribus, mento 0, labello ovato-oblongo obtuso petalis minore.—*Fl. Brit. Ind.* v. 811.

Hab. Malayan Peninsula; Perak, *Scortechini*; *King's Collector.*

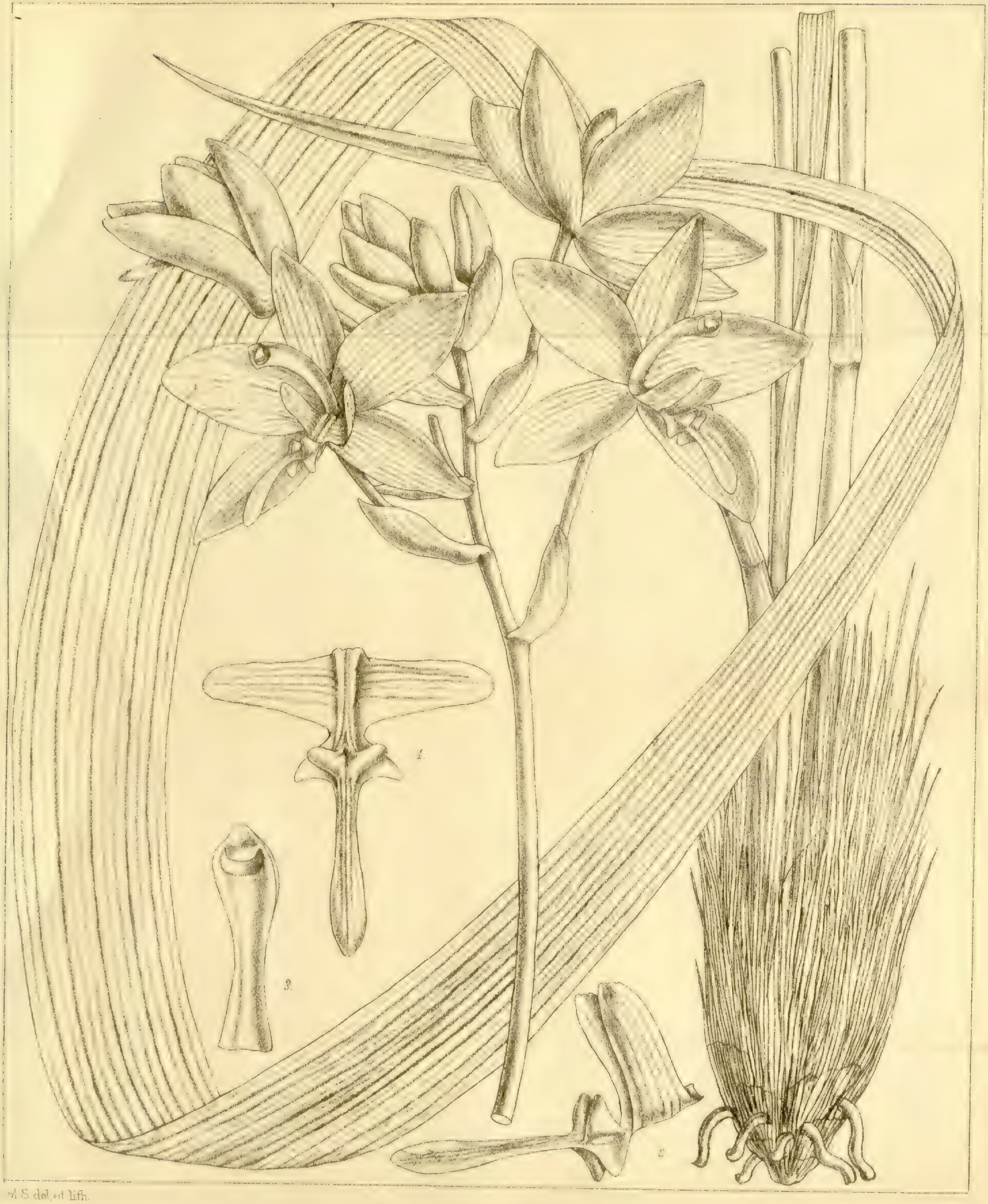
Caules 1–3-pollicares, crassitie pennæ passerinæ, sæpe decurvi, internodiis brevibus. *Folia* vix pollicaria, ad $\frac{1}{16}$ poll. lata, in vaginam brevem latiusculam articulata, teretia. *Flores* ad $\frac{1}{20}$ in. diam., pallide virescentes; ovarium oblongum, teres; perianthium marcescens bracteæque papillosæ, carne celluloso. *Columna* crassiuscula, pede nulla, rostello erecto; anthera mitriformis.

The genus *Phreatia* is placed by Bentham near to *Eria*, and, indeed, Reichenbach has reduced it to the latter genus; but besides the total difference in habit, which is that of *Oberonia*, the cellular texture of the flowers (and their minute size, which renders them most difficult of analysis from dried specimens), is very peculiar. The latter character occurs also in *Thelasis* in *Vandeæ*, and further examination of living specimens of both genera may lead to the association of these genera. Blume referred *P. elegans* to *Thelasis*, and Thwaites placed his genus *Octarrhena*, which is a *Phreatia*, in *Vandeæ*.—J. D. H.

Fig. 1. Bract and flower. 2. Ovary, lip and column. 4. Young fruit. 5. Anther. *All greatly enlarged.*

M S del, et lith.

Ipsea ? Wrayana, Hk. f.



M. S. del. et lith.

Spathoglottis Wrayi, Hk. f.

Plate 2086.

SPATHOGLOTTIS WRAYI, *Hook. f.*

Orchideæ. Subtribe Erieæ.

S. Wrayi, *Hook. f.*; elata, foliis longissime lineari-lanceolatis, scapo robusto racemoque multifloro glaberrimo, bracteis magnis oblongis obtusis, floribus amplis aureis, sepalis ovato-oblongis subacutis, petalis latioribus obtusis, labelli lobis lateralibus lineari-oblongis apice rotundatis, terminali anguste spathulato basi 2-auriculato, disco inter auriculas 2-calloso.—*Fl. Brit. Ind.* v. 813.

Hab. Malayan Peninsula; Perak, alt. 4,500 feet.—*Wray.*

Caules cæspitosi, basi fibris elongatis rigidis dense stipati. *Folia* 2–3-pedalia, 1–1½ poll. lata, multinervia. *Scapi* 12–18 poll. alti, crassitie pennæ anserinæ; bracteæ ¾–1 poll. longæ: ovarium unacum pedicello 2-pollicare. *Flores* 2½ poll. diam.; labelli glaberrimi lobo terminali lateralibus longiore sed multo angustiore recto rigido, auriculis lateralibus acutis deflexis.

A superb species, of which I had seen but one few-flowered specimen when describing it for the 'Flora of British India.'—J. D. H.

Fig. 1. Front view of lip. 2. Side view. 3. Column. *All enlarged.*

M.S. del, et lith.

Spathoglottis Bensoni, Hk. f.

PLATE 2087.

SPATHOGLOTTIS BENSONI, *Hook. f.*

ORCHIDEÆ. **Subtribe** ERIEÆ.

S. Bensoni, *Hook. f.*; gracilis, folio lineari-lanceolato, scapo elato, racemo elongato multifloro floribusque puberulis, bracteis ovato-lanceolatis, sepalis petalisque subæqualibus ovato-oblongis, labelli lobis lateralibus oblongis apice rotundatis, terminali obcordato v. cuneato basi auriculis magnis callosis erectis aucto, disco inter lobos laterales tomentello.—*Fl. Brit. Ind.* v. 814.

HAB. Pegu; on the Prome Hills, *Benson* (*Herb. Maingay*).

Folium pedale, $1\frac{1}{2}$ poll. latum. *Scapus* 18–20-pollicaris; bracteæ inferiores $\frac{1}{3}$ poll. longæ, superiores minores; racemus 6–8-pollicaris, laxiflorus; ovarium unacum pedicello $\frac{3}{4}$–1-pollicare. *Flores* 1 poll. diam.; labelli lobus terminalis lateralibus minor. *Capsula* pollicaris, elliptico-oblonga, teres.

The specimens are not very good, but I think that the drawing faithfully represents the plant as I described it.—J. D. H.

Fig. 1. Flower, with the lip removed. 2. Front view of lip. 3. Side view. *All enlarged.*

3.
2.
4.
1.

PLATE 2088.

PHAJUS NANUS, *Hook. f.*

ORCHIDEÆ. Subtribe BLETIEÆ.

P. nanus, *Hook. f.*; humilis, foliis elliptico-ovatis acuminatis, scapo radicali robusto foliis breviore, bracteis cymbiformibus, sepalis petalisque lanceolatis acuminatis, labello fere orbiculari obscure 3-lobo, lobis rotundatis plicatis, intus puberulo ecalcarato, columna puberula. *Fl. Brit. Ind.* vi. 192.

HAB. Bengal; in the Buxa Doar, *Gamble* (*in Herb. Calcutt.*).

Rhizoma carnosum, cataphyllis foliaceis anguste linearibus foliis normalibus longioribus instructum. *Folia* normalia 4–5 poll. longa, 2–2½ lata, in petiolum alatum angustata. *Scapus* 6-pollicaris, crassitie pennæ anserinæ, vaginatus, vaginis pollicaribus obtusis inflatis; racemus brevis, pauci–densiflorus; sepala 1½ poll. longa; columna brevis.

In its dwarf habit this *Phajus* is quite different from any hitherto described, and the long, narrow, apparently primordial leaves at the base of the short leafy stem are peculiar. I have seen only two very badly preserved specimens, the analysis of the flower of which can be regarded as provisional only. The species probably inhabits grassy plains; in this respect also differing from most of its congeners, which are forest-loving plants.—J. D. H.

Fig. 1. Lip. 2. Column. 3. Anther. 4. Pollinia. *All enlarged.*

M.S. del. et lith.

Tainia penangiana, Hk. f.

PLATE 2089.

TAINIA PENANGIANA, *Hook. f.*

ORCHIDEÆ. Subtribe BLETIEÆ.

T. penangiana, *Hook. f.*; folio lanceolato longe acuminato petiolo æquilongo, sepalis lateralibus lineari-lanceolatis acuminatis petalisque angustioribus 5–7-nerviis, labello obovato-oblongo disco trilamellato, lobis lateralibus parvis incurvis terminalem suborbicularem acuminatum crispatum incumbentibus, calcare brevi cylindraceo obtuso.—*Fl. Brit. Ind.* v. 820.

HAB. Penang, *Maingay*.

Folium pedale, $1\frac{1}{2}$ poll. latum, petiolo basi non pseudobulboso. *Scapus* 18–20-pollicaris, gracilis; vaginis paucis lanceolatis patulis; bracteæ $\frac{1}{4}$–$\frac{1}{3}$-pollicares, lanceolatæ; ovarium unacum pedicello $\frac{2}{3}$ poll. longum. *Flores* $1\frac{1}{2}$ poll. lati; sepala lateralia paullo recurva; labellum parvum, calcare libero; columna alata.

The only specimens seen were collected by the late *Dr. Maingay* on stones on the top of (Government?) Hill, Penang, and are not in good condition, the flowers being all detached.—J. D. H.

Fig. 1. Lip and spur. 2. Column. 3. Anther. *All enlarged.*

M.S del.et lith

Tainia khasiana, Hk.f.

Plate 2090.

Tainia khasiana, *Hook. f.*

Orchideæ. Subtribe Bletieæ.

T. khasiana, *Hook. f.*; folio lanceolato acuto, petiolo in pseudobulbum elongatum sessile, scapo elato, bracteis lanceolatis, sepalis lateralibus lineari-lanceolatis obtusis petalis linearibus 3-nerviis obtusis paullo latioribus, mento conico obtuso, labello spathulato-obovato subunguiculato, disco inter lobos laterales tenuiter 2-lamellato in terminalem rotundatum incumbentes —*Fl. Brit. Ind.* v. 821.

Hab. East Bengal; in the Khasia Hills, alt. 3,000 feet, *J. D. H.* and *T. Thomson.*

Pseudobulbus 3–4-pollicaris, teres, in collum elongatum attenuatus. *Folium* 8 poll. longum, 2 poll. latum, in petiolum 3-pollicarem angustatum. *Scapus* unacum racemo multifloro 2-pedalis; bracteæ $\frac{1}{4}$–$\frac{1}{3}$ poll. longæ; ovarium unacum pedicello $\frac{1}{4}$–$\frac{1}{3}$ poll. longum. *Flores* 1 poll. lati, sepala lateralia calcari brevi rotundato adnata; columna brevis, anthera dorso umbonata.

A single specimen of this species was found by Dr. Thomson and myself, in 1850, below Churra, in the Khasia Hills. It closely resembles Wight's figure of *T. bicornis* (*Ania latifolia*, Wt. Ic. t. 914), to which it was referred by Lindley, but wants the two horns on the anther, and I find no lamellæ on the midlobe of the lip. It may, however, prove to be a variety of that plant.—J. D. H.

Fig. 1. Flower, with the lip removed. 2. Lip. 3. Side view of column and anther. 4. Front view. *All enlarged.*

M S del et lith

Tainia minor, Hk. f.

PLATE 2091.

TAINIA MINOR, *Hook. f.*

ORCHIDEÆ. Subtribe BLETIEÆ.

T. minor, *Hook. f.*; folio elliptico-oblongo acuminato, petiolo basi vaginato vix pseudobulboso, scapo gracillimo, bracteis lanceolatis, sepalis lateralibus lineari-lanceolatis subacutis petalisque oblanceolatis 3-nerviis, mento brevi rotundato, labello obovato-oblongo v. cuneato disco inter lobos laterales angustos acutos latiuscule 2-lamellato, lobo terminali orbiculari crenato 3–5-carinato, anthera 2-umbonata.—*Fl. Brit. Ind.* v. 821.

HAB. Sikkim Himalaya; at Mahalderam, alt. 7,000 feet, *Clarke*.

Folium 1½–2-pollicare, 2 poll. latum; petiolo 2-pollicari, basi vaginato et paullo incrassato. *Scapus* unacum racemo paucifloro 8–12-pollicaris, infra medium vagina elongata tubulosa instructus; bracteæ ¼ poll. longæ; ovario unacum pedicello ½-pollicare. *Flores* 1 poll. lati, flavescentes; sepala lateralia recurva; columna anguste alata; pollinia 8, quorum 4 minuta.

The nature of the ridges on the midlobe of the lip is difficult to make out from specimens that have been dried, and the analysis in the plate and the description may require modification. *T. minor* is the most northern and western species of the genus hitherto detected.—J. D. H.

Fig. 1. Flower, with the lip removed. 2. Lip. 3. Anther. *All enlarged.*

M.S. del, et lith

Tainia hastata, Hk. f.

PLATE 2092.

TAINIA HASTATA, *Hook. f.*

ORCHIDEÆ. Subtribe BLETIEÆ.

T. hastata, *Hook. f.*; scapo elato gracillimo, racemo elongato multifloro, bracteis anguste lanceolatis ovario æquilongis, floribus inter minoribus, sepalis lateralibus petalisque subæqualibus linearibus acuminatis 3-nerviis, mento obtuso, labelli disco alte 2-lamellato, hypochilo sagittato lobis lateralibus acutis, epichilo orbiculari basi angustato medio obscure 3-carinato, anthera hemispherica.—*Fl. Brit. Ind.* v. 821. Eulophia hastata, *Lindl. in Journ. Linn. Soc.* iii. 25.

HAB. **Assam**, *Masters* (*Herb. Griffith*).

Folia desunt. *Scapus* 2–3-pedalis, 2–3-vaginatus, vaginis tubulosis; racemus 5–7-pollicaris, sub-densiflorus; bracteæ $\frac{1}{6}$–$\frac{1}{4}$ poll. longæ. *Flores* $\frac{2}{3}$ poll. lati; columna anguste alata.

Lindley, who described this as a *Eulophia*, says of it that it is the smallest-flowered of the aphyllous species of that genus, and that the hastate lip is unlike that of any other. As far as the size of the flowers is concerned the same may be said of it in respect of its being a *Tainia*, to which genus it certainly belongs, as shown by the pollinia. The hypochile of the lip is not hastate, but sagittate. It may prove to be a small-flowered state of the common *T. latifolia*.—J. D. H.

Fig. 1. Flower, laid open, with the lip removed. 2. Lip. 3. Column. 4. Pollinia. *All enlarged.*

M.S. del. et lith.

Tainia latilingua, Hk.f.

PLATE 2093.

TAINIA LATILINGUA, *Hook. f.*

ORCHIDEÆ. Subtribe BLETIEÆ.

T. latilingua, *Hook. f.*; folio elliptico acuto, petiolo æquilongo basi paullo incrassato, scapo elato racemo multifloro, bracteis angustis ovario æquilongis, sepalis petalisque subæquilongis linearibus obtusiusculis 3-nerviis, mento brevissimo, labello orbiculari disco lamellis 3 crenulatis instructo, lobis lateralibus breviter oblongis obtusis, terminali orbiculari, anthera hemisphærica.—*Fl. Brit. Ind.* v. 822.

HAB. Malayan Peninsula; Perak, *Scortechini*.

Folium 8 poll. longum, $2\frac{1}{2}$ latum, petiolo basi cylindraceo vix pseudobulboso. *Scapus* unacum racemo $1\frac{1}{2}$–2-pedalis, vaginis breviusculis subinflatis instructus; bracteæ $\frac{1}{2}$ poll. longæ. *Flores* 1 poll. diam.; sepala lateralia et petala falcata; columna anguste alata, pollinia æqualia.

The lip of this species differs from that of all others above described in its great breadth.—J. D. H.

Fig. 1. Flower, laid open, with the lip removed. 2. Lip. 3. Anther. 4. Pollinia. *All enlarged.*

Tainia Maingayi, Hk.f.

Plate 2094.

TAINIA MAINGAYI, *Hook. f.*

Orchideæ. Subtribe Bletieæ.

T. Maingayi, *Hook. f.*; pseudobulbis angustis rhizomate longe crinito congestis, foliis elliptico-lanceolatis petiolo multo longioribus, scapo elato gracili paucifloro, bracteis lanceolatis ovarium æquantibus, floribus amplis, sepalis petalisque lanceolatis caudato-acuminatis, mento 0, labello rhomboideo breviter trilobo venoso, lobis incisis disco apices versus echinulatis et medio carinis 3 crassis puberulis instructo, lobo medio processu styliformi terminato.—*Fl. Brit. Ind.* v. 822.

Hab. Penang; on red earth in the jungle, *Maingay*.

Folia solitaria v. bina, breviter petiolata, 5–10 poll. longa, acuminata, 5–7-nervia, in petiolum 1–2-pollicarem angustata. *Scapus* 18–20-pollicaris, 5–6-florus; bracteæ $\frac{1}{2}$–$\frac{3}{4}$ poll. longæ. *Flores* 3 poll. lati; labellum parvulum, sepalis multoties brevius, basi cuneatum, lobi laterales truncati, latiusculi; carinæ in lamellas breves dentatas in discum lobi terminalis evanidas dilatatæ; columna gracilis.

I have seen but one specimen of this remarkable species, which has the petals and sepals produced into filiform tails, as in the Malayan *T. speciosa*, Blume, which has a very long petiole, and petals much shorter than the sepals.—J. D. H.

Fig. 1. Dorsal sepal, column, and its foot, with the bases of the lateral sepals and petals. 2. Lateral sepal. 3. Petal. 4. Lip. *All enlarged.*

M.S del et lith.

Agrostophyllum glumaceum Hk. f.

PLATE 2095.

AGROSTOPHYLLUM GLUMACEUM, *Hook. f.*

ORCHIDEÆ. Subtribe CŒLOGYNEÆ.

A. glumaceum, *Hook. f.*; caule brevi crasso compresso, foliis a basi late loriformibus sensim attenuatis, vagina elongata subinflata, capitulo laxifloro, bracteis cymbiformibus acutis ovario acutangulo multo brevioribus, sepalis lateralibus late ovatis acuminatis, petalis anguste linearibus 1-nerviis, labelli hypochilo parvo 2-lobo, epichilo ovato-orbiculari, columna utrinque infra apicem in alam brevem acutam dilatata.—*Fl. Brit. Ind.* v. 824.

HAB. Malayan Peninsula; Perak, *Scortechini, King's Collector.*

Caules dense fastigiati, $\frac{1}{2}$–$\frac{3}{4}$ poll. lati. *Folia* disticha, 8–18 poll. longa, $\frac{1}{2}$–$\frac{2}{3}$ poll. lata, supra medium ad apicem obtusam attenuata, nervosa; vagina 3-pollicaris. *Capitulum* sessile, globosum, $1\frac{1}{2}$ poll. diam., ebracteatum, e spiculis pauciflоris dense congestis; bracteis distichis, basi cupulæformibus. *Flores* $\frac{1}{4}$ poll. lati, albi; labelli epichilum planum dorso hypochili concavi insertum; columna crassa; anthera hemispherica.

A very long-leaved species.—J. D. H.

Fig. 1. Portion of spikelet, with bracts and a flower. 2. Column and lip. 3. Lip. 4. Column. 5. Anther. *All enlarged.*

Agrostophyllum majus, Hk.f.

PLATE 2096.

AGROSTOPHYLLUM MAJUS, *Hook. f.*

ORCHIDEÆ. Subtribe CŒLOGYNEÆ.

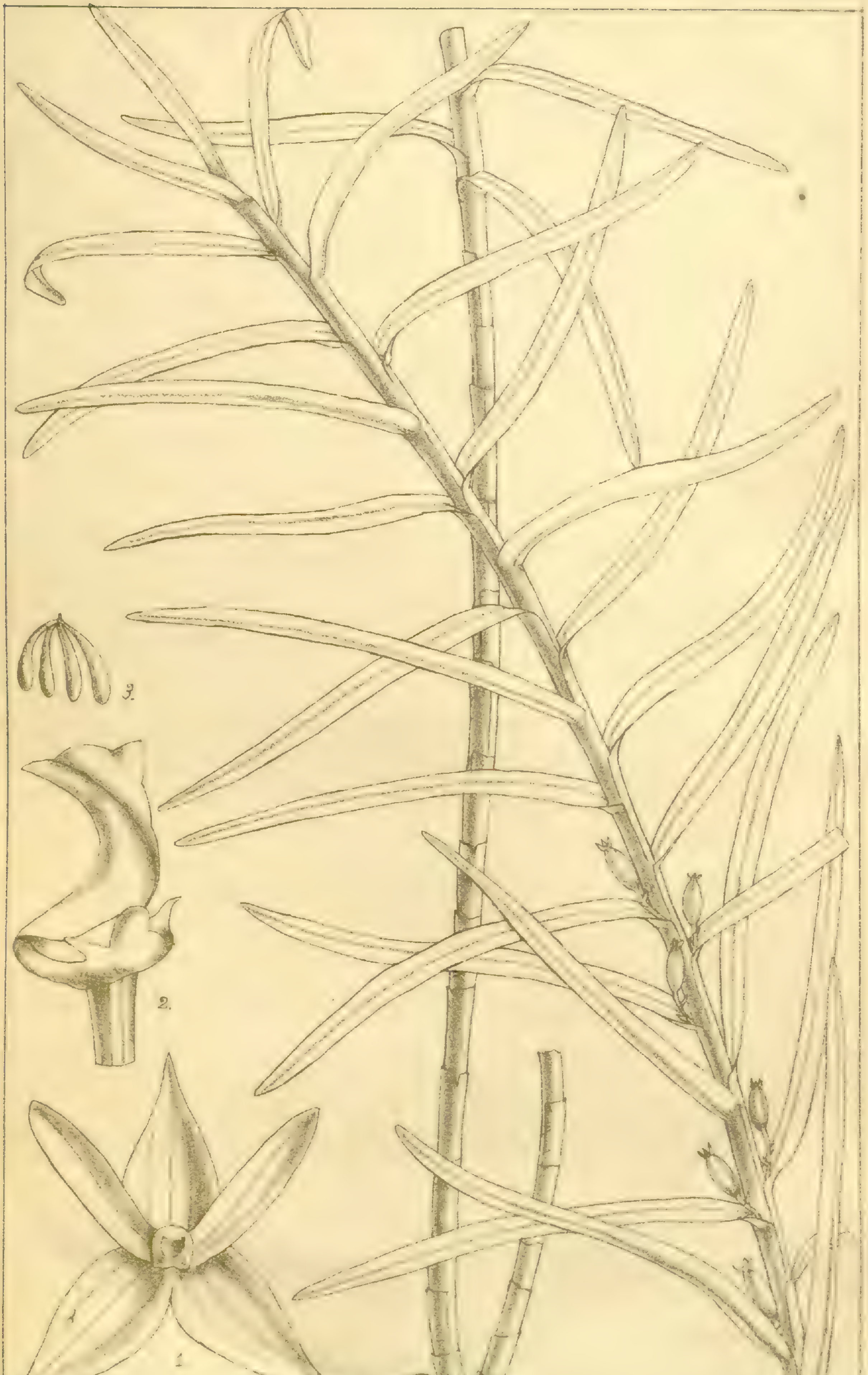
A. majus, *Hook. f.*; caule robusto crasso compresso, foliis ensiformibus apice rotundatis, vagina breviuscula, capitulo bracteis latis involucrato globoso densifloro, bracteis imbricatis obtusis ovariis acute angulatis longioribus, sepalis lateralibus late ovatis acutis, petalis lineari-lanceolatis 1-nerviis, labelli hypochilo subquadrato marginibus inflexis, epichilo orbiculari v. late ovato acuto v. acuminato nudo, columna crassa facie excavata.—*Fl. Brit. Ind.* v. 824.

HAB. Malayan Peninsula; Perak, *Scortechini, King's Collector.*

Caules 2–3-pedales, dense fastigiati, $\frac{2}{3}$ poll. diam. *Folia* erecta, 6–10 poll. longa, $\frac{3}{4}$–$1\frac{1}{4}$ poll. lata, nec apice nec basi angustata; vaginæ 2–3-pollicares. *Capitulum* sessile, 1 poll. diam., e spiculis densissime congestis bracteis cupulariformibus imbricatis vaginatis constans. *Flores* $\frac{1}{4}$ poll. diam. albi, sepala dorso carinata.

Resembles a Javan species (*A. longifolia*, Bl.), but which has a more triangular epichile with rounded bosses at the sides, and a narrower column. The whole genus requires revision before the character of any species as hitherto described can be considered stable.—J. D. H.

Fig. 1. Spikelet, with bracts and a flower. 2. Side view of ovary and flower. 3. Front view of flower. *All enlarged.*



M.S del, et lith

Agrostophyllum pauciflorum Hk.f.

Plate 2097.

AGROSTOPHYLLUM PAUCIFLORUM, *Hook. f.*

Orchideæ. Subtribe Cœlogyneæ.

A. pauciflorum, *Hook. f.*; caule gracili, foliis 2-pollicaribus linearibus obtusis, floribus minutis solitariis axillaribus breviter pedunculatis, bracteis minutis, sepalis ovatis acuminatis, petalis linearibus obtusis 1-nerviis, labello unguiculato rhomboideo.—*Fl. Brit. Ind.* v. 824.

Hab. Malayan Peninsula; Perak, *Scortechini*.

Caules dense cæspitosi, 18–20 poll. longi, crassitie pennæ anatinæ, inferne nudi, superne multifoliati, internodiis $\frac{1}{3}$–$\frac{1}{2}$-pollicaribus. *Folia* $\frac{1}{8}$–$\frac{1}{6}$ poll. lata, patentia, flaccida, 1-nervia. *Flores* vix $\frac{1}{16}$ poll. diam. *Capsulæ* $\frac{1}{2}$ poll. longæ, pedicellis $\frac{1}{12}$–$\frac{1}{8}$ poll. longis, basi bracteatis.

The specimens are far advanced towards fruiting, and I have had recourse to rude sketches of Father Scortechini for the description of the flowers and analyses on the plate.—J. D. H.

Fig. 1. Flower, with the lip removed. 2. Lip and column (from sketches of Father Scortechini). 3. Pollinia (from the same). *All greatly enlarged.*

Cratostylis malaccensis, Hk f

Plate 2098.

CERATOSTYLIS MALACCENSIS, *Hook. f.*

Orchideæ. Subtribe Cœlogyneæ.

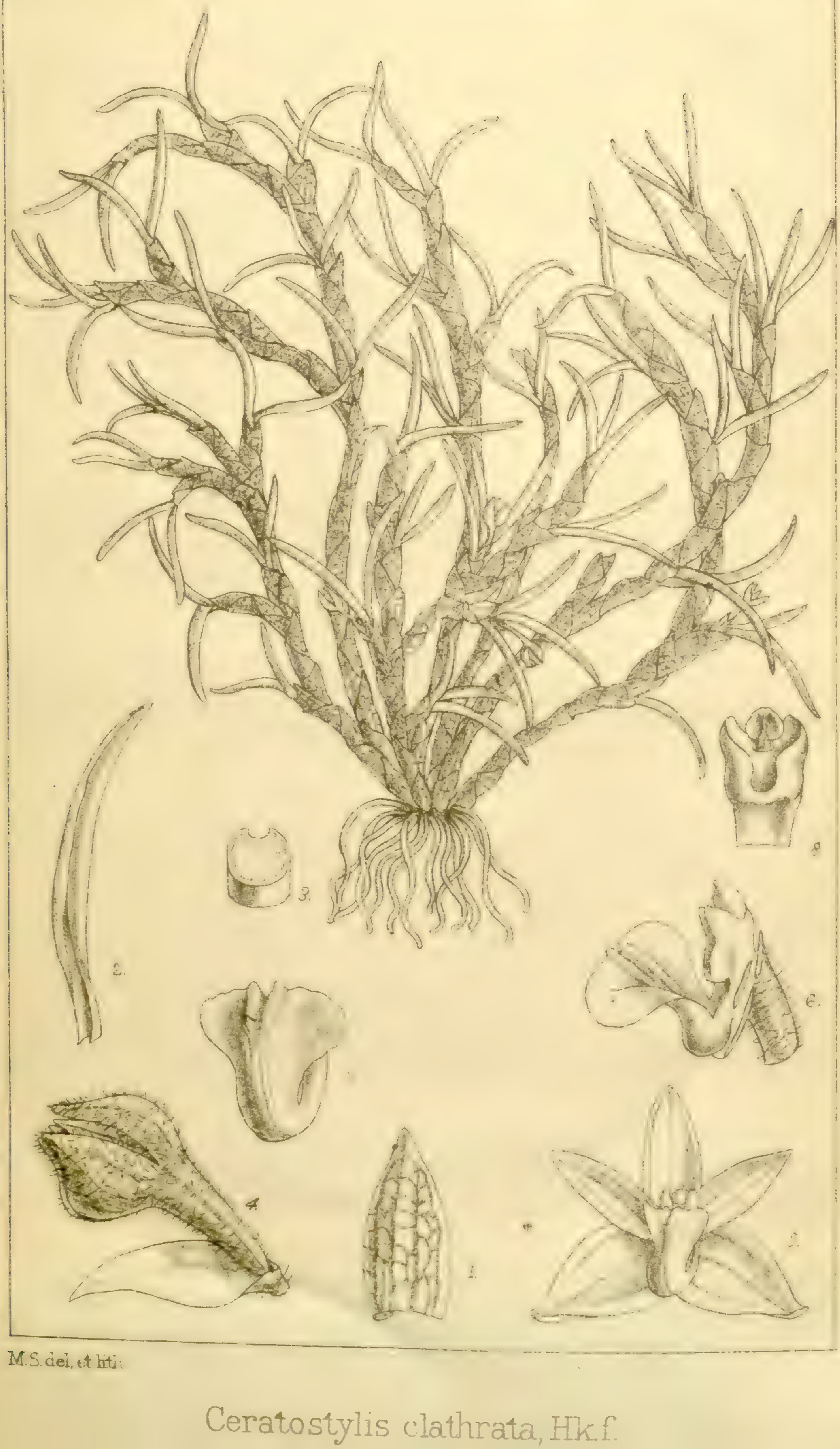
C. malaccensis, *Hook. f.*; aphylla, scapis aphyllis junciformibus basi squamis brevibus scariosis imbricatis clathratim nervosis vaginatis, floribus minimis in capitulum sessile scapo laterale (v. lapsu apicis scapi terminale) bractea suffultum congestis, sepalis lateralibus ovatis obtusis, petalis lineari-lanceolatis obtusis, mento in calcar sacciforme producto, labello lanceolato disco 3-carinato, columna longe 2-auriculato.—*Fl. Brit. Ind.* v. 825.

Hab. Malayan Peninsula; Mount Ophir, *Griffith*; Perak, on Batang Padung, alt. 4,900 feet, *Wray*.

Dense cæspitosa. *Scapi* 6–8 poll. longi, $\frac{1}{8}$ poll. diam., erecti, teretes, lævcs, subacuti; bracteæ infra capitulum $\frac{1}{4}$ poll. longæ, ovatæ, coriaceæ; scapi pars supra capitulum pollicaris. *Capitulum* vix $\frac{1}{3}$ poll. diam. *Flores* ad $\frac{1}{12}$ poll. lati, extus glabri v. sparse pilosi; sepala 3-nervia; mento sepalis æquilongo apice rotundato; petala 1-nervia; labellum rectum, apice incrassatum, basi angustatum, marginibus membranaceis. *Columna* brevissima, auriculis lineari-oblongis obtusis intus concavis.

In the 'Flora of British India' I have described the flowers as glabrous, but I find they are sometimes sparsely hairy externally. The species is near the Assamese *C. teres*, Reichb. f. (Griff. Notul. iii. 359; Ic. Pl. Ind. Or. t. 332), which has a similar perianth, mentum and column, but a more spathulate lip, and the basal sheaths are not clathrately reticulate. *C. malaccensis* is very probably a native of the Malayan Islands, but I have failed to identify it with any hitherto described.—J. D. H.

Fig. 1. A basal sheath of the scape. 2. Side view of flower. 3. Front view. 4. Column and lip. 5. Lip. 6. Anther. *All more or less enlarged.*



M.S. del. et lith.

Ceratostylis clathrata, Hk.f.

Plate 2099.

CERATOSTYLIS CLATHRATA, *Hook. f.*

Orchideæ. Subtribe Cœlogyneæ.

C. clathrata, *Hook. f.*; caulibus vaginis imbricatis appressis clathratim nervosis undique tectis, foliis lineari-subulatis dorso sulcatis v. marginibus ad costam revolutis, floribus minutis axillaribus solitariis breviter pedunculatis pilosis, sepalis lateralibus late ovatis gibbis, mento rotundato, petalis oblongo-lanceolatis, labello incurvo basi saccato lamina obcordata truncata emarginata dorso infra apicem 2-carinata, disco per totam longitudinem bicarinato, columnæ auriculis brevibus.—*Fl. Brit. Ind.* v. 825.

Hab. Malayan Peninsula; Perak, on Batang Padung, alt. 4,900 feet, *Wray, Scortechini.*

Caules 3–4 poll. longi, densissime cæspitosi, flexuosi, simplices v. parce ramosi; vaginæ $\frac{1}{4}$–$\frac{1}{3}$ poll. longæ, obtusæ, scariosæ, pulcherrime reticulatæ. *Folia* $\frac{1}{2}$–1 poll. longa, patenti-recurva, obtusa. *Bracteæ* ovato-lanceolatæ. *Flores* $\frac{1}{10}$ poll. longi; sepala et petala obscure 3-nervia; labelli lamina subflabelliformis, dorso callo minuto instructa. *Columna* brevis, crassa, auriculis rotundatis.

When first describing this species for the 'Flora of British India,' my only materials were very imperfect, but accompanied with a rude drawing from Father Scortechini. Since that time I have received better specimens, from which Miss Smith has made the accompanying figure.—J. D. H.

Fig. 1. Sheath of stem. 2. Leaf. 3. Section of young leaf. 4. Side view of flower and bract. 5. Flower, front view. 6. Lip and column. 7. Lip. 8. Front view of column. *All greatly enlarged.*

M. S. del. et lith.

Ceratostylis pendula, Hk. f.

Plate 2100.

CERATOSTYLIS PENDULA, *Hook. f.*

Orchideæ. Subtribe Cœlogyneæ.

C. pendula, *Hook. f.*; caulibus pendulis ramosis radicantibus vaginis imbricatis scariosis acuminatis obscure reticulatis undique tectis, foliis linearibus obtusis dorso profunde canaliculatis, floribus axillaribus fasciculatis minutis, sepalis ovatis obtusis, mento 0, petalis linearibus obtusis, labello breviter unguiculato ovato v. oblongo subacuto, columnæ auriculis majusculis.—*Fl. Brit. Ind.* v. 826. Trigonanthus pendulus, *Korthals mss. ex Reichb. f.* in *Herb. Lindl.*

Hab. Malayan Peninsula; Perak, *King's Collector*; Borneo, *Lobb*; Celebes, *Riedel.*

Caules densissime cæspitosi, 5–6 poll. longi, flexuosi, tenues; vaginæ $\frac{1}{4}$ poll. longæ, laxæ, costatæ, apicibus sæpe laceris. *Folia* 1–$1\frac{1}{2}$ poll. longa, carnosula, marginibus ad costam revolutis. *Flores* $\frac{1}{10}$ poll. longi, bracteis stellatim patentibus immixti; ovaria pilosa; sepala crassiuscula, glaberrima, concava, 3-nervia; petala 1-nervia; labelli lamina crassa, subacuta, marginibus membranaceis, basi rotundata v. subcordata, ungue latiuscula.

Probably a common Malayan species. I have seen very few flowers, and these in a very unsatisfactory state for analysis, from their minuteness and the impossibility of relaxing them after being dried; and I would here observe, with regard to this and the other species of this genus hitherto figured in this work, that I expect an examination of fresh flowers would greatly modify the descriptions and drawings. The figure of the whole plant is taken from a flowering Perak specimen.—J. D. H.

Fig. 1. Section of leaf. 2. Side view of flower. 3. Front view. 4. Column and lip. 5. Anther. 6. Two of the pollinia. *All greatly enlarged.*

N.B.—The first three parts of this volume were issued with wrappers and first pages of letterpress lettered 'Vol. XI., Third Series.' This should be corrected to 'Vol. I., Fourth Series.'